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문학석사 학위논문

**A Construction-based Analysis of  
the Conditional Conjunction *and***

조건 접속사 *and* 에 대한 구문 기반 분석

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조 주 연

# A Construction-based Analysis of the Conditional Conjunction *and*

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## **Abstract**

# **A Construction-based Analysis of the Conditional Conjunction *and***

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The present study aims to investigate the syntactic and semantic properties of the conditional-*and* construction within a construction-based Head-Driven Phrase Structure Grammar (HPSG) approach. In the literature, the independent sentential structure for the conditional-*and* construction has not been proposed separately from the coordinate construction, though the researchers noted that the conditional-*and* differs from the coordinating-*and*. Unlike the previous attempts, the present study proposes the new constructional structure for the conditional-*and*

clause, focusing on the fact that its syntactic and semantic properties are shared with the *if*-conditionals.

In terms of syntax, two clauses of the conditional-*and* construction functions unequally. I argue that this construction consists of a subordinating first clause and a following main clause, since the second clause follows the main clause phenomena. Also, I first propose that the conditional-*and* is a main clause marker to lead the main clause. This is based on the evidence from the general position for the conjunction, the position of the pause, and the cross-linguistic data.

In terms of semantics, the conditional-*and* construction is paraphrased with the hypothetical conditional among several uses of the *if*-clause. In addition, the main clause of the construction is restricted to hold the generic or future interpretation.

There have been some previous studies to account for the conditional-*and* construction. Culicover and Jackendoff (1997) argued that the conditional-*and* construction is syntactically identical to the coordinate structure, assuming the syntax-semantic mismatch. Some scholars such as Keshet (2013) treated the conditional conjunction construction as a construction with the special focus structure. From the derivational approach, Weisser (2015) posited that the conditional-*and* construction is base-generated as an adjunct and moved to the position of the coordinate clause. These analyses have their shortcomings in that they are limited to capture a part of the properties of the construction, or cannot be expanded to the relevant constructions containing the conditional conjunction.

Therefore, I propose the construction-based analysis asserting that the conditional-*and* construction is a combination of a subordinating clause and a main

clause, to be compatible with the syntax and semantics of the construction. In specific, I propose two subtypes of the *head-functor-phrase*: *conditional-conjunction-cl* and *conditional-and-cl*. Due to the fact that the type constraints are inherited from the supertypes, the types I propose have their head daughters to carry the basic syntactic information, and the functor daughters to inherit the marking value. As a consequence, the newly proposed constraints can describe the structure of the construction as well as the relation between the clauses, capturing the peculiarities of the conditional-*and* construction.

The significances of my analysis are as follows: first, I present the new perspective on the conditional-*and* construction, proposing that it is a syntactically subordinate structure. Second, the treatment of the conditional-*and* as a main clause marker asserts that it functions as an independent conjunction, separated from its coordinating form. Third, the new constructional types *conditional-conj-cl* and *conditional-and-cl* are developed in order to offer the syntactic and semantic explanation within the HPSG framework without positing any non-standard syntactic mechanism. Fourth, my analysis deals with other related constructions with the conditional conjunction, by suggesting the subtypes under the unified constructional organization.

**Keywords:** conditional conjunction, conditional-*and* construction, subordinate structure, main clause marker, HPSG, construction-based approach

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# 1. Introduction

The conjunction *and* normally functions as the coordinator to combine the first and the second clause in a parallel way. However, there is an abnormal use of *and* to yield a conditional meaning as in (1a). This was known as conditional conjunction<sup>1</sup> *and*.

- (1)     a. You drink another can of beer and I'm leaving. [conditional conjunction]  
          b. If you drink another can of beer, I'm leaving. [*if*-conditional]

(Culicover and Jackendoff, 1997, p. 197)

The sentence with the conditional conjunction *and* in (1a) is paraphrased with the *if*-conditional, as in (1b). The first clause of the conditional conjunction construction holds a conditional meaning similar to the *if*-clause, and the second clause presents the consequence which is satisfied when the statement of the first clause comes true. Unlike the coordinate structure, the conditional conjunction construction exhibits the functions of two conjuncts unevenly.

Regarding such similarity with the *if*-clause, this thesis mainly focuses on the syntactic structure of the conditional conjunction construction.

Aside from the existence of the coordinator, the conditional-*and* construction notably shares the major syntactic properties with the *if*-conditional: they neither permit right node raising nor gapping, lost their meaning in a tripartite structure, allow a quantifier to bind the variable pronoun in the first conjunct, and

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<sup>1</sup> Conditional conjunction has been also known as *left-subordinating-and* in Culicover and Jackendoff (1997). The term *conditional conjunction* was first used by Russell (2007).

are possible under asymmetric extraction, all of which are determined contrariwise for the coordinating conjunction (see section 2.1 for more detail). Despite the slight differences in acceptability, the relationship between them is much closer than that between a conditional-*and* clause and a coordinating-*and* clause.

A few researchers have noticed the similar characteristics of the conditional-*and* construction with the *if*-clause. Nonetheless, they did not analyze them in a parallel way. Rather, some scholars such as Culicover and Jackendoff (1997) claimed that the conditional-*and* is syntactically a coordinator but semantically a subordinator, by assuming the separate levels of syntax and conceptual structure. However, this approach is problematic in that a number of phenomena cannot be explained only by either syntax or semantics.

Some other scholars adopted an independent conjunction to disambiguate the two usages of *and*. Keshet (2013) proposed a distinct focus structure for the conditional conjunction structure, mainly concerned with the semantic features. In addition, a derivational analysis was discussed by Weisser (2015). He claimed that the subordinate structure of the conditional-*and* is transformed into the coordinate structure. In either case, its special syntax and semantic structure has not been examined together with a unified account.

The present study aims to analyze both the syntax and semantics of the conditional-*and* construction in detail. Particularly, I investigated the structure of the construction and the role of the conditional conjunction *and* with regards to the conditional interpretation.

The analysis I propose reveals that the structure of the conditional conjunction construction is a combination of a subordinating clause and a main

clause. I side with the treatment of the conditional-*and* aside from the coordinate one, and focus on the relationship between the conditional conjunction construction and the *if*-conditional. Motivated by the shared properties with the *if*-clause, this thesis treats the first clause of the conditional-*and* construction as a subordinate clause.

Subsequently, I posit that the second clause including the conjunction *and* functions as the main clause. This view is based on the fact that the typical main clause phenomena occur in the second clause. For example, only the second clause of the construction can decide the agreement of the tag questions and allow the subject-auxiliary inversion.

Even though the conditional-*and* construction behaves like the *if*-conditional, it lacks the marking element *if* for the adjunct clause but contains the marking *and* for the main clause. Previously, Culicover and Jackendoff (1997) refused to treat the conditional-*and* as a subordinating conjunction. What they considered, however, was the possibility of conjunction to be placed in the clause-final position, where conjunctions in English never appear.

In contrast, I assign the role of main clause marker to the conditional conjunction *and*. Since it is located in the clause-initial position, it obeys the natural place for the clause marker in English. Its intonation pattern as well as its cross-linguistic existence in other languages also supports this claim of the main clause marker.

All taken together, I analyze the conditional-*and* constructions within the framework of construction-based Head-Driven Phrase Structure Grammar (HPSG). I propose new type constraints called *conditional-conj-cl* and *conditional-and-cl*,

both of which are classified as subtypes of *head-functor-phrase*. In this study, the category *functor* is used to analyze the markers and modifiers with a single feature, based on Van Eynde (2003). These constraints specify the structure of its adjunct daughter and the head daughter as well as the construction as a whole.

Also, the conditional conjunction *and* is newly proposed and separated independently from its coordinating counterparts. What I argue about the conditional-*and* is that it marks a main clause, which has not been proposed in the literature. This treatment allows the head clause of the construction to carry the conjunction *and*, although the conjunction does not contribute anything to the syntactic or semantic information of the construction.

Semantically, I provide two semantic features to the clauses of the conditional conjunction construction, respectively. The preceding adjunct clause is presented as a hypothetical conditional clause, which makes the construction distinct from other non-hypothetical conditionals. The following main clause delivers a consequential interpretation. The logical relation of two clauses is also explained by the constraint that I propose.

In my analysis, I deal with the syntax of the *conditional-and-cl* along with its semantics without assuming an extra mechanism such as conceptual structure or derivational process. Instead, it is accounted for within a construction-based approach. Not only this, the new perspective on the conditional conjunction is proposed. Furthermore, the examination towards the related constructions is first specified in the present account. I display the detailed constraints on the relevant structures by capturing their resemblance with other conditional-*and* constructions.

The organization of this thesis is as follows. In Chapter 2, I introduce the major phenomena of the conditional conjunction construction. To be specific, both syntactic and semantic properties of the construction are presented. Following that, I discuss the relevant structures with regard to the commonalities and differences between the constructions concerned in this paper. In Chapter 3, the previous analyses of the conditional conjunction *and* are critically reviewed including the mismatching hypothesis, the focus-based account and the derivational account. Chapter 4 begins with the basic tenets of HPSG and proceeds with a new proposal on the conditional-*and* construction. The related constraints and expanded application to other structures are also proposed within the HPSG framework. Finally, Chapter 5 provides the concluding remarks on the discussion.



The conditional reading rarely appears in perfect as shown in (4) but there is a counterexample such as (5).

- (4) #You've drunk another can of beer and I've left<sup>2</sup>.

(Culicover and Jackendoff, 1997, p. 198)

- (5) [context: I'm about to open the door to find out whether or not you've broken anything] You've broken another vase and I'm leaving.

(Culicover and Jackendoff, 1997, p. 198, fn. 5)

In (5), present perfect is used but many researchers, including Keshet (2013), considered this sentence as an instance of present tense. Thus, he added the instances of past tense in both conjuncts.

- (6) [Context: Locker inspections used to be really tough] you'd hidden any contraband, and you immediately got suspended. (Keshet, 2013, p. 216)

Note that the distribution of the perfect, either present perfect or past perfect, is possible due to the specific context where someone is being directed.

Also, the conditional conjunction is differentiated from the coordinate structure or the ordinary *if*-conditional due to the fact that it allows the identical

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<sup>2</sup> In what follows, I use the marking # when the sentence cannot have the conditional conjunction (CC) meaning even though it is grammatically well-formed.

tense for the both conjuncts. If not, the sentence is not acceptable to use a conditional-*and* as shown in (7).

- (7) #You ate too many carrots, and you turn orange. [no CC reading]

(Keshet, 2013, p.215)

Second, two conjuncts in a conditional conjunction construction have distinct subjects and agreements.

- (8) You come/\*comes in one minute late and the teacher gives/\*give you detention.

(Keshet, 2013, p. 219)

- (9) The weather is quite predictable around here...

a. It looks like rain, and it always does rain.

b. #It looks like rain and always does rain. [no CC reading]

(Keshet, 2013, p. 219)

The two verbs in (8) agree with their own subjects respectively, but do not agree with each other. In (9), the expletive subject *it* cannot license both conjuncts when used in the conditional conjunction construction. Another expletive subject *it* is required for the second conjunct. If the expletive *it* is shared across the both clauses, it does not function as a conditional sentence.

Third characteristic of the conditional conjunction is that it appears only in IP-conjunctions, not in CP- or VP-conjunctions as in (10).



- (10) a. You know, of course, that [<sub>IP</sub> you drink one more beer] and [<sub>IP</sub> you get kicked out].
- b. #You know, of course, [<sub>CP</sub> that you drink one more beer] and [<sub>CP</sub> that you get kicked out].
- c. #Big Louie [<sub>VP</sub> sees you with the loot] and [<sub>VP</sub> puts out a contract on you].

(Culicover and Jackendoff, 1997, p. 198)

The conjoined IP ensures that respective subjects and agreements are needed for two conjuncts. When it contains the coordinate conjunction instead of the conditional conjunction, the identical subject for the second clause would be naturally deleted.

Another property of the conditional conjunction structure is the asymmetry with regards to the order of conjuncts. Unlike the coordinator *and*, the conditional conjunction disallows the order change of the conjuncts without any difference in meaning of the sentence.

- (11) a. The cops show up, and a fight will break out.
- b. A fight breaks out, and the cops (will) show up.

(Klinedinst and Rothschild, 2012, p. 138)

Two sentences in (11) express the opposite causal relationship. The first conjunct in the conditional-*and* construction can be paraphrased with the *if*-clause to yield a conditional meaning. The following second conjunct presents the

consequence of the conditional sentence. Thus, the condition of the sentence (11a) would be the situation where the cops show up, while the same situation is interpreted as the consequence in (11b).

Moreover, the conditional conjunction construction cannot be used in a tripartite structure with the form of X, Y, and Z, contrary to the coordinate construction.

- (12) (\*)You drink another can of beer, Bill eats more pretzels, and I'm leaving.  
≠If you drink another can of beer, (and if) Bill eats more pretzels, I'm leaving. (Culicover and Jackendoff, 1997, p. 198)

Next, the conditional meaning of the construction cannot survive under right node raising<sup>3</sup> (13) and gapping<sup>4</sup> (14), parallel to the *if*-conditional. On the contrary, those phenomena can appear in the coordinate constructions.

- (13) a. Big Louie found out about \_\_\_\_, and Big Louie put out a contract on, that guy who stole some loot from the gang. [coordination]  
b. \*Big Louie found out about \_\_\_\_, and Big Louie puts out a contract on, that guy who stole some loot from the gang. [conditional conjunction]

---

<sup>3</sup> Right Node Raising typically refers to the type of sentences shown in (i). Here, the adjective *pregnant* is shared by both conjuncts and it moves to the rightmost position of the sentence.

(i) Sally might be, and everyone believes Shelia definitely is, pregnant. (Ross, 1967, p. 175)

<sup>4</sup> Gapping is illustrated by the following type of sentences in (ii). The conjoined clauses, except for the first clause, lack the main verb *ordered*. This missing verb is called *gap*.

(ii) Tom ordered bacon, and Dick lettuce, and Harry tomatoes. (Ross, 1967, p. 355)

c. \*If Big Louie found out about \_\_\_\_, then Big Louie puts out a contract on, that guy who stole some loot from the gang. [*if*-conditional]

(Culicover and Jackendoff, 1997, p. 198)

(14) a. Big Louie stole another car radio and Little Louie the hubcaps.  
[coordination]

b. \*Big Louie steals one more car radio and Little Louie the hubcaps.  
[conditional conjunction]

c. \*If Big Louie steals one more car radio, then Little Louie the hubcaps.  
[*if*-conditional] (Culicover and Jackendoff, 1997, p. 199)

Lastly, extraction can characterize the conditional conjunction construction in contrast with the coordinate structure.

(15) a. \*This is the loot that you have identified t and we have arrested the thief on the spot. [coordination]  
b. ?This is the loot that you just identify t and we arrest the thief on the spot. [conditional conjunction] (Culicover and Jackendoff, 1997, p.206)

According to Culicover and Jackendoff (1997), conditional conjunction can violate the Coordinate Structure Constraint (CSC) in that it allows extraction independently from either conjunct, which is not applied to the coordinate structure.

### 2.1.2 Semantic Properties

The conditional conjunction construction seems to have similar semantics with the *if*-conditional. They certainly share some properties in distribution as shown above; however, the conditional conjunction has distinct semantic features on its own.

First, the conditional conjunction cannot be used in irrealis conditional such as (16a) or the sentence with abstract stative clauses in (16b).

(16) a. If Bill hadn't come, we would have been sad.

≠\*Bill didn't come, and we were sad.

b. If  $x$  is less than  $y$ , the derivative of  $f(x)$  is positive.

≠\* $x$  is less than  $y$ , and the derivative of  $f(x)$  is positive.

(Culicover and Jackendoff, 1997, p.199)

Instead, the conditional conjunction is restricted to the hypothetical conditional. According to Bhatt and Pancheva (2006), the hypothetical conditional is the typical type of conditional, which specifies the circumstances in which the antecedent states the condition that makes the consequent true. Other kinds of conditionals, such as factual conditional (17) and relevance conditional<sup>5</sup> (18) do not allow the paraphrase of conditional conjunction structures.

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<sup>5</sup> Bhatt and Pancheva (2006) introduced the different types of conditionals. *Factual conditional* is used to presuppose the situation where the other people except for the speaker consider the antecedent as true. Another type of conditional called *relevance conditional* describes the case whose antecedent reveals the discourse-relevant consequence, whether the consequence is true or not.

(17) A: My friend Joe, whom you haven't met, is very smart.

B:a. If he's so smart, why isn't he rich?

b. \*He's so smart, and why isn't he rich?

(Bhatt and Pancheva, 2006, p. 671)

(18) a. If I may be honest, you are not looking good.

b. #I may be honest, and you are not looking good.

(Bhatt and Pancheva, 2006, p. 671)

Next, the second conjunct of the conditional conjunction construction contains a modal verb or holds a generic interpretation.

(19) The cops show up, and a fight...

a. will break out.

b. must have broken out.

c. breaks out.

(Klinedinst and Rothschild, 2012, p. 140)

Even if the conjunct lacks the modal and generic meaning, the sentence can be acceptable as a conditional conjunction structure when it has a future modal meaning<sup>6</sup>.

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<sup>6</sup> According to Klinedinst and Rothschild (2012), non-modal and non-generic conjuncts would be less acceptable in the conditional-*and* construction, but possible in certain contexts as in (i).

(i) ?You show up at midnight tonight, and you see something you'll never forget.

This case was explained by Keshet (2013) as he argued that the conditional conjunction is licensed when the meaning is either generic or future-oriented.

(20) Big Louie sees you with the loot, and he puts out a contract on you.

(Culicover and Jackendoff, 1997, p. 198)

This meaning restriction on the second clause suggests that the conditional conjunction is used with the narrow range of the conditional sentences, when compared with the *if*-conditional which is not limited to the particular semantics.

Also, the conditional meaning of the construction is excluded when the sentence contains an epistemic modal.

(21) a. If John left work at six, he must be home by now.

b. #John left work at six, and he must be home by now.

(Keshet, 2013, p. 217)

(22) a. If he ate the omelet, Urquhart was immune to arsenic.

b. #He ate the omelet, and Urquhart was immune to arsenic.

(Keshet, 2013, p. 217)

Whether the modal is expressed overtly as in (21) or covertly in (22), the conditional conjunction cannot hold its conditional meaning accompanied with epistemic modals, as noted in Schwager (2005). The same explanation is applied to epistemic adverbs.

(23) a. If John left work at six, he's probably home by now.

b. #John left work at six, and he's probably home by now.

(Keshet, 2013, p. 218)

In addition, variable binding is another phenomenon which differentiates the conditional conjunction from the coordinate conjunction.

- (24) a. \*We came up with a few more nice stories about him<sub>i</sub> and sure enough, every senator<sub>i</sub> changed his vote in our favor. [coordination]  
b. ((You) come up with) a few more nice stories about him<sub>i</sub> and every senator<sub>i</sub> will change his vote in your favor. [conditional conjunction]  
c. If you come up with a few more nice stories about him<sub>i</sub>, every senator<sub>i</sub> will change his vote in your favor. [*if*-conditional]

(Culicover and Jackendoff, 1997, p. 204)

In a normal coordination structure (24a), pronominal *him* cannot be bound by antecedent *senator* which does not c-command it. Binding relations are not licensed over the conjuncts. However, in a conditional conjunction structure (24b), the antecedent in the second conjunct can bind the variable pronoun in the first conjunct.

Next, another property of the conditional conjunction is adverb raising from the second clause. An adverb in the second conjunct can take scope above both clauses.

- (25) a. You come early enough, and you sometimes get a seat.

=Sometimes, if you come early enough, you get a seat.

b. You sometimes come early enough, and you get a seat.

≠Sometimes, if you come early enough, you get a seat.

(Keshet, 2013, p. 242)

In (25a), the adverb *sometimes* in the second conjunct can take the widest scope in the sentence. However, the same explanation cannot be applied to (25b), where the adverb is located in the first clause.

Lastly, the conditional conjunction construction can contain negative polarity item (NPI) such as *any* in the first conjunct, which is not available for the coordinate conjunction structure.

(26) a. \*John will drink any more tequila, and (then) he will pass out.

[coordination]

b. You drink any more tequila, and you'll pass out. [conditional

conjunction]

(Klinedinst and Rothschild, 2012, p. 141)

So far, I have shown the characteristics of the conditional conjunction construction. It is clearly distinguished from the *if*-conditional or the coordinate construction despite the fact that some of the properties are shared with the *if*-conditional. The properties discussed in this section are summarized in (27).



(27)

	Coordination	Conditional Conjunction	<i>If</i> -conditional
Tense	N/A	$t_1=t_2$	$t_1 \leq t_2$ <sup>7</sup>
Subject-verb agreement	Non/local	Local	Local
Conjunct type	N/A	IP	IP
Order change	√	*	*
Tripartite conjunction	√	*	N/A
Right node raising	√	*	*
Gapping	√	*	*
Extraction	*	?√	?√
Conditional type	N/A	Hypothetical conditional	All types of conditional
2 <sup>nd</sup> conjunct meaning	N/A	Modal/ generic/future	No constraint
Modality	N/A	Deontic modality	All types of modality
Variable binding	*	√	√
Adverb raising from 2 <sup>nd</sup> conjunct	*	√	√
Negative polarity item	*	√	√

## 2.2 Related Structures

The conditional conjunction construction and a few similar structures were recognized in the literature. In this section, the related structures are introduced and examined in respect of their similarities and differences.

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<sup>7</sup> This denotes that the tense of the first conjunct precedes or matches that of the second conjunct.

### 2.2.1 OM-sentences

OM-sentence was named by Culicover (1970; 1972) because the sentence starts with the noun phrase *one more*. Some scholars including Jespersen (1909) observed that this construction conveys the conditional meaning with the conditional conjunction *and*. OM-sentences consist of a noun phrase before *and*, and a following sentence. An example of OM-sentences is provided in (28a), which can be paraphrased as in (28b) or (28c).

- (28) a. One more can of beer and I'm leaving.  
b. If {you give me/I get hit by /I see/I hear about/you buy/...} one more can of beer, then I'm leaving.  
c. If one more can of beer {hits me/explodes/hits you/...}, then I'm leaving.  
(Culicover, 1970, p.366)

Note that there are also a number of instances of OM-sentences without a phrase *one more*.

- (29) a. A little water in the face and he goes indoors.  
b. The first sign of cold weather and John says he's going to put his snow tires on.  
(Culicover, 1970, p.367)

Whether the noun phrase in the first clause begins with *one more* or not, it can be interpreted as a sentence with a conditional meaning. The interpretation of the noun phrase is vague since it can be subject to the various contexts related to

the noun. The sentence following *and* becomes the consequence which is resulted in by one of those contexts. Because of this conditional-consequence relation, OM-sentence can be discussed in line with the other conditional-*and* structures though it seems to be a coordinate form of a noun phrase and a clause.

### 2.2.2 AdjP *and* S

Another structure that is similar to the typical conditional-*and* construction is AdjP + *and* + S. While OM-sentence has an NP in its first conjunct, this structure contains an adjective phrase instead. The corpus search in the Corpus of Contemporary American English (COCA) returns some of data of this construction, which has not been dealt with in the literature.

- (30) a. If your stick is too short, you'll miss the ball when you swing. *Too long and you'll hit the ground behind the ball.* (COCA 1998 MAG)
- b. *Too slow and you'll bog down, too fast and you might eat pine needles.* (COCA 1995 MAG)
- c. *Too tight and you'll constrict your toes. Too big and the extra fabric will bunch up,* causing discomfort, friction, maybe even blisters. (COCA 1990 MAG)
- d. *Too cold and the chicken will be greasy. Too hot and it will burn.* (COCA 2007 NEWS)

These examples have the conditional conjunction *and* and can be construed as the conditional sentences. For example, the italicized part of (30a) expresses the

proposition *if your stick is too long, you'll hit the ground behind the ball*, referring to the preceding sentence. The conjunction *and* in this structure leads the consequential clause after the first clause as the conditional-*and* normally does. Therefore, I consider this AdjP + conditional-*and* + S construction as one of the related types with the conditional conjunction construction.

### 2.2.3 Pseudo-imperatives

Pseudo-imperatives are another type of sentences with the conditional conjunction. The first conjunct of a pseudo-imperative has the form of an imperative<sup>8</sup>.

- (31) Come one more step closer and I'll shoot. (Clark, 1993, p.79)

Among others, Han (2000) argued that the imperative in a pseudo-imperative sentence does not make a command and the entire sentence expresses the conditional meaning. She treated pseudo-imperatives as the imperative-like constructions, not imperatives, for several reasons. First, there are some imperatives that cannot stand alone but only acceptable in pseudo-imperatives, as Davies (1986) noted.

- (32) a. ?Know the answer.  
b. Know the answer, and you'll get an A. (Davies, 1986, p. 163)

---

<sup>8</sup> Some researchers called this structure with different terms such as *imperative-like conditional* (ILC; Davies, 1986) or *imperative and declarative* (IaD; Schwager, 2005).

Second, pseudo-imperatives can contain negative polarity items in the first conjunct, while imperatives cannot.

- (33) a. \*Say any more.  
b. Say any more and there'll be trouble. (Davies, 1986, p.163)

Moreover, the covert subject in pseudo-imperatives can hold a generic interpretation, but the subject of imperative only refers to the addressee.

- (34) Wash yourself every day, and your skin gets dry. (Davies, 1986, p.164)

Also, pseudo-imperatives can describe the past time event when the adequate context is given, whereas true imperatives are always future-oriented.

- (35) a. \*Say one word out of turn in those days.  
b. Life was hard in those days. Say one word out of turn, and they'd dock you a week's wages. (Han, 2000, p. 175)

When pseudo-imperative is treated as an imperative-like construction following Han (2000), the idea of modal subordination is adopted.

- (36) a. Come any closer, and I'll shoot.  
b. In the worlds where you come any closer, I'll shoot.  
(Keshet, 2013, p. 249)

Based on modal subordination<sup>9</sup>, the first conjunct in the pseudo-imperative construction contain the modality of *imp(p)*. Then, the second conjunct with a modal such as *will(q)* becomes modally subordinated under the context where the possible worlds for *p* is satisfied. Therefore, the pseudo-imperative, as a whole, holds the conditional reading<sup>10</sup>.

#### 2.2.4 Conditional Disjunctions

Similar to conditional conjunctions, conditional disjunctions are discussed in the previous studies. The sentences with the conditional disjunction are interpreted as conditional threats (Culicover and Jackendoff, 1997, p. 214).

- (37) a. We must go now, or we shall be late for tea.  
 b. If we don't go now, we shall be late for tea. (Keshet, 2013, p.213)

---

<sup>9</sup> Modal subordination assumes that a subordinate sentence containing a modal can be interpreted as conditionals. The sentence with a modal, which indicates the second clause in the pseudo-imperative construction, is modally subordinated when it is asserted depends on the modality of the preceding first clause (Roberts, 1989).

<sup>10</sup> In contrast with Han (2000), Russell (2007) claimed that the first conjunct in pseudo-imperatives carries the directive force. The imperatives which cannot stand alone are not treated in his analysis. He only considered the felicitous imperative such as (ia).

- (i) a. Everyone shut up, and I'll tell you who Renick is.  
 b. Everyone shut up. In the worlds where everyone shuts up, I'll tell you who Renick is. (Russell, 2007, p.161)

Both Han (2000) and Russell (2007) agreed that the interpretation of pseudo-imperatives is made under modal subordination. However, only Russell (2007) argued that the first clause should be used as a true imperative.

The conditional disjunction shares some properties with the conditional conjunction. The example in (38) shows that the conditional meaning of the construction cannot remain the same in perfect.

- (38) #Little Oscar has made himself scarce, or Big Louie has gotten real mad.  
(Culicover and Jackendoff, 1997, p. 214)

In addition, the conditional disjunction only allows IP conjuncts like the conditional conjunction does.

- (39) a. #Georgie warned us [<sub>CP</sub> that Little Oscar makes himself scarce by midnight] or [<sub>CP</sub> that Big Louie gets real mad].  
b. #Big Louie [<sub>VP</sub> gets the payoff] or [<sub>VP</sub> gets real mad].  
(Culicover and Jackendoff, 1997, p. 214)

Also, the conditional disjunction does not appear in the sentence with gap as in (40) in parallel with the conditional conjunction.

- (40) \*You kill Georgie, or Big Louie \_\_\_\_ your dog.  
(Culicover and Jackendoff, 1997, p. 214)

However, the conditional disjunction is different from the conditional conjunction in terms of variable binding as (41a) and negative polarity items in (41b).

- (41) a. Give him<sub>i</sub> enough bribes and/\*or every senator<sub>i</sub> will vote for the president's proposal.
- b. Say anything and/\*or I'll call the police.

(Culicover and Jackendoff, 1997, p.214)

Moreover, when the first conjunct contains the modal, the conditional disjunction construction generally presents the consequence of not doing something mentioned in the first conjunct, whereas the first conjunct of the conditional conjunction construction is paraphrased as an *if*-conditional.

- (42) a. You should sit down or I'll call the police.
- b. If you shouldn't sit down, I'll call the police.
- c. You should sit down. If you don't sit down, I'll call the police.

The conditional conjunction obeys this generalization without exception, but the conditional disjunction has some unpredictable examples such as (42a). Here, the sentence does not have the same meaning with (42b), which is the typical paraphrase for the conditional disjunction. Instead, the sentence (42a) has the meaning of (42c). It is because the modal *should* takes the scope over the first clause and requires the separate sentence to yield the right interpretation. Because of these differences, many of the scholars including Keshet (2013) take the view that the conditional-*or* construction is dissimilar to other conditional conjunction constructions.



### 3. Previous Analyses

In this chapter, I review the previous analyses of the conditional conjunction construction: the mismatching hypothesis, the focus-based approach and the derivational approach. The mismatching hypothesis assumed a separate semantics for the conditional-*and*. On the other hand, the other two approaches considered conditional conjunction as the independent usage of the conjunction.

#### 3.1 Mismatching Hypothesis

Culicover and Jackendoff (1997) argued that conditional conjunction is one of the mismatches between syntactic structure and conceptual structure. They treated the conditional-*and* construction as the coordinate structure in syntax but the subordinate structure in conceptual structure. They separated the left-subordinating *and* ( $_{LS}and$ ), as known as the conditional conjunction, from the normal coordinating *and* ( $and_C$ ). Their mismatching hypothesis is sketched in (43).

(43) Mismatching Hypothesis (Culicover and Jackendoff's (1997) (15b))

	Syntactic structure	Conceptual structure
Coordination	$and_C, _{LS}and$	$and_C$
Subordination	if, since	if, since, $_{LS}and$

They agreed with the fact that the conditional conjunction construction in (44b) seems to be parallel to the *if*-conditional in (44a); however, they claimed against this structure for some reasons. First, they argued that a subordinating conjunction usually occurs in the clause-initial position in English. If the

conjunction *and* is treated as a subordinator as in the structure in (44b), however, it becomes a clause-final conjunction which does not have any reason to be accepted. Second, the conditional conjunction cannot appear on the right of the main clause as in (44c). Unlike the conditional conjunction structure, the normal subordinate clause can appear either before or after the main clause.

- (44) a. [<sub>s</sub>[<sub>s</sub> If Big Louie sees you with the loot] he puts out a contract on you.]  
 b. [<sub>s</sub>[<sub>s</sub> Big Louie sees you with the loot] <sub>LS</sub>and] he puts out a contract on you.] (not adopted)  
 c. \*[<sub>s</sub>Big Louie puts out a contract on you, [<sub>s</sub>[<sub>s</sub>Big Louie sees you with the loot] <sub>LS</sub>and.]]

What they proposed instead is the syntactically coordinate structure shown in (45).

- (45) [<sub>s</sub>[<sub>s</sub> Big Louie sees you with the loot] <sub>LS</sub>and [<sub>s</sub>he puts out a contract on you.]]

They proposed a mismatching hypothesis to distinguish the status of the conjunction in syntactic structure from that in conceptual structure. For example, they explained that asymmetric extraction is available only in the conditional conjunction structure as in (15) above. They defined the CSC as the semantic constraint and it is applied to the semantically coordinate construction. Thus, since

the conditional conjunction structure is a subordinate clause in its conceptual structure, the CSC does not apply to it without any problem<sup>11</sup>.

However, the mismatching hypothesis can be criticized in some aspects. Traditional theories had recognized only one autonomous system and assumed that the different levels of grammar are connected by derivational process from one to another. On the contrary, the mismatching hypothesis assumes the independence of a superficial syntax and a level of conceptual structure.

This assumption of the mismatching hypothesis makes it complicated to explain some phenomena such as binding. To adequately explain the binding relations, this approach requires two segregated tiers of conceptual structure, a descriptive tier and a referential tier (Jackendoff, 2002). The former organizes the conceptual functions, arguments and modifiers, while the latter is committed to referential and binding relations. Furthermore, the meaning from the conceptual structure should meet the constraints on syntax and phonology to be connected to the canonical surface structure. Overall, it cannot exclude the syntax completely and requires too many different structures to show the mismatch between the syntax and semantics.

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<sup>11</sup> Yuasa and Sadock (2002) expanded the mismatching analysis. They discussed the phenomena called *pseudo-subordination* in Japanese, which is the opposite case to the conditional conjunction structure: syntactically subordinate but semantically coordinate. The clausal pseudo-subordination was found in Japanese *te*-coordination.

(i) \*Dare-ga Osaka-e it-te Hiro-ga Kyoto-e it-ta-n des-u-ka?  
 who-NOM Osaka-to go-and Hiro-NOM Kyoto-to Go-PAST-NOMZ POL-PRES-INTERROG  
 (Intended: Who sent to Osaka, and Hiro went to Kyoto?)

Pseudo-subordination structures are subject to the CSC because they are coordinate in conceptual structures. In (i), the sentence shows the asymmetric structure as only the first conjunct contains the *wh*-element. This results in a violation of the CSC and makes the sentence ungrammatical.

Such complexity can be eliminated by the construction-based approach in that one construction can handle the syntax and semantics together without an additional structure. It also follows the principle of Occam's razor, which emphasizes the simplification of the descriptions in grammar.

Another reason that I argue against the mismatching hypothesis is that it is hard to consider gapping as a semantic process. Culicover and Jackendoff (1997) observed the ungrammaticality of gapping in the conditional conjunction construction contra to the coordinate structure. They considered that this contrast comes from the differences in conceptual structures. However, gapping needs to be constrained under the syntactic barriers which it cannot cross over (Hartmann, 2001, among others).

- (46) a. \*John spoke to Fred and Mark ~~spoke to~~ Peter.  
b. \*John spoke to the visitor from France and Mark ~~spoke to the visitor~~  
from Belgium. (Hartmann, 2001, p.147)

The examples in (46) are ungrammatical with gapping although the sentences are conceptually coordinate. The ungrammaticality of the sentences is due to a syntactic constraint, the Major Constituent Condition<sup>12</sup>. In (46a), whether the remnant is *Peter* or *to Peter* is semantically identical. However, the sentence would be grammatical if the remnant was a syntactically major constituent *to Peter*,

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<sup>12</sup> Hankamer (1973) claimed that the remnants of gapping should be major constituents. Major constituents are defined as follows: "A major constituent of a given sentence  $S_0$  is a constituent either immediately dominated by  $S_0$  or immediately dominated by VP, which is immediately dominated by  $S_0$  (Hankamer, 1973, p.18, fn. 2)."

instead of *Peter*. This implies that gapping is not solely restricted by its semantics but affected by the syntax.

Furthermore, there are a few examples of the semantically subordinate constructions that are affected by the CSC<sup>13</sup>, refuting the mismatching hypothesis.

- (47) a. \*Here's the whiskey<sub>i</sub> which I went to the store and Peter bought t<sub>i</sub>.  
b. Here's the whiskey<sub>i</sub> which I went to the store and bought t<sub>i</sub>. [coordination]  
(Ross, 1967; Weisser, 2015)

Culicover and Jackendoff (1997) regarded the CSC as the semantic constraint, which is applied to the semantically coordinate construction. According to them, the semantically subordinate construction should not under the effect of the CSC. However, contrary to their hypothesis, the sentence with the temporal conjunction (47a) is ungrammatical under the CSC. In contrast, the sentence (47b) is the coordinate structure but violates the CSC without affecting grammaticality<sup>14</sup>.

Still, the analysis of the CSC has not been consistent among researchers. Some researchers like Kehler (1996; 2002) argued that the CSC in natural language cannot be operated in a purely syntactic environment. She argued that the syntactic operation such as the CSC can be affected by the type of coherence relation such as resemblance relation, cause-effect relation, or contiguity relation. Like above, the issues about the CSC have been controversial whether it is entirely syntactic or

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<sup>13</sup> Ross (1967) first defined the Coordinate Structure Constraint (CSC) by the syntactic mechanism: "In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct (Ross, 1967)."

<sup>14</sup> The case in (47) above can be seen as the temporal conjunct (Weisser, 2015): the first conjunct has a temporal meaning and the sentence would be paraphrased as 'Here's the whiskey I bought when I went to the store.'

somewhat semantic. Thus, arguments over the extraction and the CSC cannot be the strong evidence for the mismatching hypothesis.

### 3.2 Focus-based Analyses

Another line of researches on the conditional conjunction is the focus-based accounts studied by Krifka (2004), Schwager (2005), and Keshet (2013).

Krifka (2004) explained that the meaning of the conditional conjunction construction comes from its focus structure. According to him, pseudo-imperative is called *imperative sentence radical* which has the form of an imperative but does not convey an imperative speech act. The main claim of him is that imperative sentence radical restricts a generic quantifier when used as a conditional sentence. The sentence in (48a) is sketched as (48b).

(48) a. Show up late, and you lose your job.

b. GEN ( $x, i$ ) [SHOW UP LATE ( $x$ :anim) in  $i$ , LOSE JOB ( $x$ ) in  $i$ ]<sup>15</sup>

(Krifka, 2004)

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<sup>15</sup> Krifka (2004) explained that *imperative sentence radical* can have a free variable and this variable is anchored to general animates such as addressee.

(i) Show up late.

- a. Imperative sentence radical:  $\lambda x. \text{anim} [\text{SHOW UP LATE } (x)]$
- b. Imperative: COMMAND [SHOW UP LATE (addressee)]

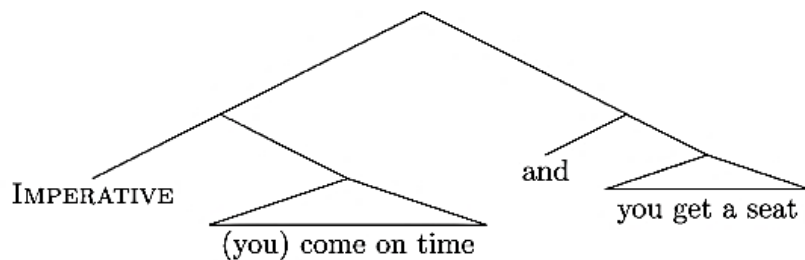
The same sentence in (i) can be used as either an imperative sentence radical or a true imperative. In the former case in (a), the sentence contains a free variable which can be interpreted by the addressee. In contrast, in the latter case as in (b), the sentence is restricted by the command operator. Thus, the meaning of the sentence (ib) is ‘Speaker orders addressee to make SHOW UP LATE (addressee) true.’

He added that the conditional conjunction structure conveys a conditional meaning when the first conjunct is deaccented, which is recognized as a sign of mapping the element to the restriction.

Based on this view, Schwager (2005) presented the structure of imperatives with the modal restriction. As for the meaning of a modal, many researchers including Lewis (1975), Heim (1982), and Kratzer (1991) agreed that it is comprised of three parts: the restriction, the nuclear scope and the modal itself. The restriction of the modal decides the possible worlds or situations where the modal has an effect over. In addition, the nuclear scope of the modal denotes some sets of the worlds where the conditions of the restriction are satisfied.

The claim of Schwager (2005) contradicted the Krifka's (2004) idea of treating the sentence with generic meaning. Instead, she argued that the modal involved in the conditional conjunction construction is not always the generic operator. What she claimed was IMPERATIVE (which stands for the imperative modal), which acts like a universal modal without a directive force.

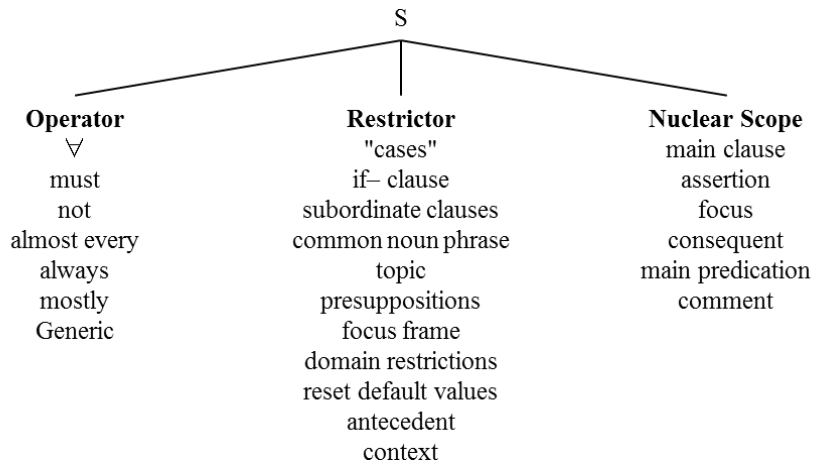
(49) a.



b. In all situations where you come on time, you get a seat.

In the sentence such as (49a), the first conjunct is unfocused while the second is focused. According to the researchers such as Rooth (1985; 1995), Partee (1991), and Krifka (1992), the focused element is mapped into the nuclear scope of the operators. Hence, the sentence in (49a) is interpreted as (49b) with the IMPERATIVE modal. The tripartite structures of the quantificational clause and what corresponds to each part is sketched by Partee (1991) as in (50).

(50)



Even though Schwager (2005) complemented the analysis of Krifka (2004), her idea cannot explain all aspects of the conditional conjunction since she only handled the conjunction in the form of pseudo-imperatives. However, there are a number of the conditional conjunction sentences without imperatives. Moreover, even the subtype of pseudo-imperatives such as (51) cannot be explained under her analysis.

(51) a. Come on time, and you'll usually get a seat.

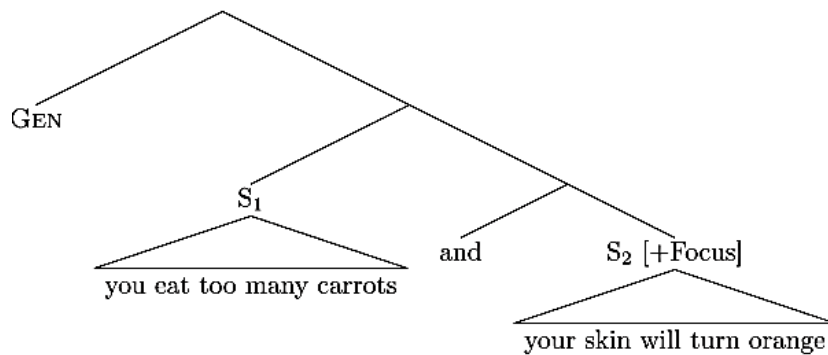


- b. Usually                      [Restriction (you) come on time]  
    [Nuclear scope you get a seat]                      (Keshet, 2013, p. 251)

The sentence in (51a) can be interpreted with the semantic structure in (51b): the adverb takes the widest scope over the sentence. Then, the imperative cannot convey its meaning to the modality of the sentence. If the imperative in (51a) plays its role as a universal modal like in (49) above, the sentence cannot be interpreted in the right way: ‘\*in which every situation where you come on time is a situation where you usually get a seat.’

Based on the previous focus-sensitive researches, Keshet (2013) argued that the conditional meaning of conditional conjunction comes from the modal element. His analysis is represented as in (52).

(52)



He proposed the covert modals GEN and FUT to explain the conditional contexts in English.

- (53) John leaves his house before doing his homework, and he's grounded.
- a. John's parents are so strict. They ground him at the drop of a hat. If John leaves his house before his homework, GEN he's grounded.
  - b. John has a lot of homework tonight, and his parents are really on his case to finish it. If John leaves his house before doing his homework, FUT he's grounded. (Keshet, 2013, p. 222)

The ambiguous sentence such as (53) is interpreted in two ways. It can give the generic reading as in (53a) or the future reading as in (53b).

The conditional conjunction structures contain one of these covert modals either GEN or FUT in this analysis. Moreover, modal adverbs can occupy the position of GEN or FUT since they take scope over the whole sentence<sup>16</sup>.

As for the focus restrictions, Keshet (2013) follows Schwager's (2005) proposal that the unfocused portion of the sentence appears to be the restriction. The general fact is that in the question-answer pairs, the focused part of an answer conveys the new information (Rooth, 1992). In line with this generalization, Keshet

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<sup>16</sup> Keshet (2013) assumed that the modal takes a scope over the conjunction but below the tense node. As mentioned above in section 2.1.2, only the root (non-epistemic) modals can appear in the conditional conjunction constructions. Researchers such as Iatridou (1991), Abusch (1997), Stowell (2004), and Hacquard (2006) agreed that the position of epistemic modals is above tense, whereas that of root modals below. This is because epistemics do not hold its meaning in the past.

(i) Darcy had to be home. (Hacquard, 2006)

When the sentence (i) is interpreted with the epistemic modality, it means that Darcy was home in the past and the reader knows the fact in the present. The reader did not know the fact before now. However, if the sentence (i) is read under the root modality, it yields a meaning that there was a past obligation which required Darcy to be home. Therefore, root modality should be below tense node. Following this, the modal node of the conditional conjunction constructions, which allows only the root modals, is located under the tense node.

(2013) noted the distinct focus structure in the conditional-*and* construction by providing the contexts in (54) and (55).

(54) What happens when you hit the space bar?

a. You hit the space bar to make your character JUMP.

b. You hit the space bar, and your character jumps. (Keshet, 2013, p. 228)

(55) How do you make your character jump?

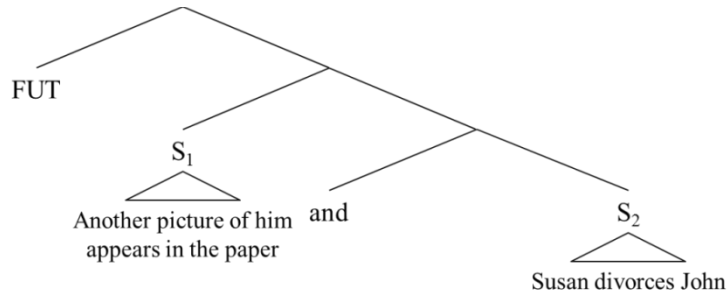
a. You hit the SPACE bar to make your character jump.

b. ??You hit the space bar, and your character jumps. (Keshet, 2013, p. 228)

The sentence gives the evidence for the focus structure of the conditional conjunction structures. The first conjunct in (54) is the given information and the second conjunct is the new information. In this case, the conditional conjunction structure is possible as revealed in (54b). On the contrary, the conditional conjunction cannot be used when the first conjunct contains the new information as in (55). Accordingly, the focus falls on the second clause in the conditional conjunction construction.

This focus-based analysis, however, does not solve some problems. Keshet (2013) only focused on the semantic properties of the conditional conjunction construction such as intonation, focus structure, and adverb raising, but did not explain the syntactic features of the construction. The phenomena of variable binding or extraction cannot be dealt with by his account. Under his account, the sentence with variable binding such as (56a) would be presented as in (56b).

- (56) a. Another picture of him appears in the paper and Susan divorces John.  
b.



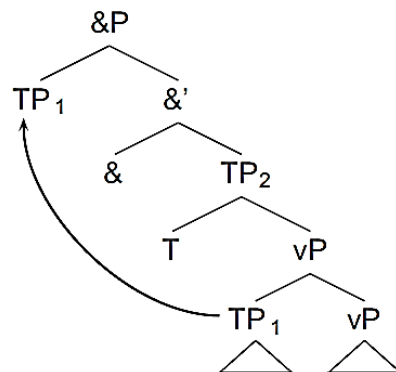
The sentence (56a) is paraphrased as ‘All future situations where another picture of him appears in the paper are such that Susan divorces John.’ The problem is that the restriction of the modal FUT cannot be completed on its own. It leads to the failure of building the possible worlds in which the first clause is satisfied. Therefore, the right meaning for the sentence with variable binding is not preserved under the focus-based analysis.

Moreover, the conditional conjunction *and* itself is not examined under the focus-based approach. Because assuming the separate usage of the conditional conjunction, it is necessary to reveal how it differs from the standard conjunction at the lexical level. However, the focus analysis is only applied to the constructional level. Also, there is no consideration of each conjunct of the construction in detail. For instance, the conditional-*and* delimits the tense or verb form of the conjuncts. These kinds of requirements should be satisfied when the conjunction combines with the clause before the whole construction is completed.

### 3.3 Derivational Analysis

Weisser (2015) discussed the conditional conjunction by proposing the mapping process from the subordinate structure into the coordinate one under the Minimalist Program. He adopted a derivational approach to capture both the coordinate and subordinate properties of the conditional conjunction construction. The first clause in the conditional conjunction construction is originally affiliated as an adjunct, but at the derivation stage, it is moved to the position of the specifier in a coordinate structure. He assumed that the original position of the first conjunct is where regular conditional clause occurs. The derivational process is summarized in (57).

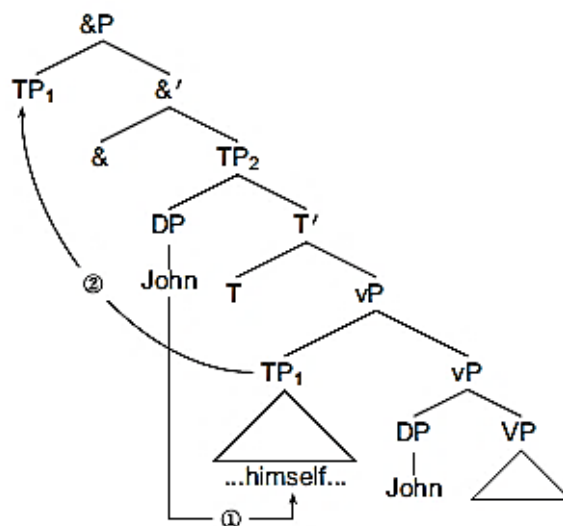
(57)



Under his analysis, the backward binding such as (58a) can be explained. The binding pattern of the conditional conjunction construction is identical to that of the subordinate structure as shown in section 2.1.2. At the early stage of the

derivation, the syntactic structures of them are illustrated in the same way. The derivation process with regards to the binding of anaphors is in (58b).

- (58) a. Another picture of himself<sub>i</sub> appears in the newspaper and John<sub>i</sub> will definitely go and get a lawyer.  
b.



The first conjunct of this construction is generated in the TP<sub>1</sub> position under vP node. Before moving up, the anaphor *himself* can be bound by c-commanding antecedent *John*. Under this analysis, the binding relation is set before transformation and this relation is licensed even after the derivation.

As for the extraction, the conditional conjunction construction allows the extraction out of only one conjunct as mentioned in section 2.1.1. If the extraction occurs after the derivational process of the first conjunct, the sentence would violate the CSC since the entire sentence becomes the coordinate structure. Therefore, Weisser (2015) noted that the extraction should be explained before the

movement. The extracted element DP is originated inside of the first TP and then moves to the position of another adjunct of the higher vP. The position that DP moves to is where the *wh*-pronoun can be derived from the adjunct. As the whole construction does not become the coordinate structure yet, the sentence does not violate the CSC<sup>17</sup>.

In addition, Weisser (2015) illustrated adverb raising in the conditional conjunction construction: only the adverb in the second conjunct takes above the whole sentence. He suggested that the adverb movement occurs before the transformation into the coordinate structure. Once the quantifier is generated from the second conjunct, it moves to the higher position. The first conjunct, however, cannot raise the quantifier out because of its status as an adjunct.

Despite the wide range of accounts on the syntax of the construction, I argue against the derivational account due to a number of problems it has. First, the analysis on the backward binding is difficult to be applied to the similar sentence with the pronoun.

- (59) a. [<sub>TP1</sub> Another picture of him appears in the paper] and [<sub>TP2</sub> John leaves].  
 b. ...[<sub>TP2</sub> [<sub>DP</sub> John<sub>i</sub>] [<sub>T</sub> [<sub>T</sub> present] [<sub>VP</sub> [<sub>TP1</sub> ...him<sub>i</sub>...] [<sub>VP</sub> leaves]]]]].

Adopting Weisser's (2015) analysis, the pronoun *him* in the sentence (59a) is bound by the antecedent *John* before the movement, as in (59b). However, this

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<sup>17</sup> The Condition on Extraction Domain (Huang, 1982) restricts the domain D where the extraction occurs to be properly governed. It generally blocks the extraction out of adjuncts. To avoid the violation of the CED, Weisser (2015) mentioned that "*if*-clause conditionals can be transparent for extraction when they precede the matrix clause", which is the idea asserted by Taylor (2007) among others. In the same fashion, the first clause of the conditional conjunction construction is considered as a conditional clause. This guarantees that extraction out of the first conjunct is possible under his analysis.

violates the binding principle which says that the pronoun should not be c-commanded by its antecedent. Since there appears the case where the pronoun is bound, this derivational approach is problematic to capture the examples of the backward binding.

Moreover, the adjunct position to vP is not constrained to the conditional clause. Other types of modifier can also be attached to the verb phrase.

- (60) a. If you drink one more beer, after you get drunk, and I'm leaving.  
b. You come on time, before the show starts, and you get a seat.

For example, in the sentence (60a), *if*-clause and *after*-clause are used as the adjuncts of the vP, because the adjunct can be stacked. Although both clauses functions as vP adjuncts, the conditional meaning only falls to the *if*-clause. This reveals that the syntactic structure does not derive the semantics of the construction in a right way<sup>18</sup>, since the position of the vP adjunct cannot disambiguate the conditional clause and the other adjunct clause.

In addition, the syntactic structure of the conditional conjunction construction does not fit into the related structures such as OM-sentences. In the case of OM-sentences, it is the NP to move to the specifier position. The NP movement into the specifier of &P would be an unprecedented case, since Weisser (2015) noted that the possible candidates for this movement have been identified as vPs, TPs and CPs.

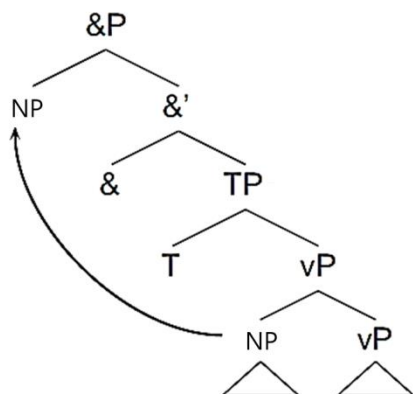
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<sup>18</sup> To my knowledge, Weisser (2015) distinguished the hypothetical conditional and non-hypothetical conditional by asserting that the former is generated in TP while the latter above TP. However, the problem I pointed out occurs in the TP where other modifiers can also appear.



(61) a. One more can of beer, and I'm leaving.

b.



Even if the NP is added to the movement candidates as in (61b), it still has the limitations under the derivational account. When the NP is allowed to move, the sentence would have the form of asymmetric coordination. This contradicts the Law of the Coordination of Likes (Williams, 1978) which only permits the symmetry coordination with the identical categories. Moreover, the specifier position for the NP would not distinguish the noun phrase which conveys the conditional meaning from the other nominal adjuncts.

Therefore, whether the NP is moved to the specifier of &P or not, OM-sentences are not adequately examined by the derivational account. Even though it shares the syntactic and semantic properties with the conditional conjunction construction, they cannot be treated in a unified way. This burdens the grammar to examine each structure independently and cannot capture the association of the related constructions.

## 4. Analysis

In the previous chapter, I reviewed the previous analyses on the conditional conjunction structure. It is noticeable that those approaches do not successfully explain the peculiar properties of the conditional-*and* construction.

Therefore, in this chapter, I present the new perspective to treat this construction as a combination of an adjunct clause and a main clause. Then, I further argue that the conditional-*and* is actually a main cause marker, not a coordinate conjunction. Arguing for a non-derivational analysis, I proceed to propose new phrasal types for the conditional conjunction construction based on construction-based HPSG. The proposed type constraints can account for the syntactic and semantic properties of the conditional-*and* construction and be applied to the relevant constructions as well.

### 4.1 Theoretical Background

In this section, I briefly introduce the basics of construction-based HPSG, based on Ginzburg and Sag (2000). In this framework, word, lexeme, and phrase are modeled as feature structures of *sign*, which is reconstructed from the Saussurean terms. A system of signs treats not only lexical rules but also grammar rules under the hierarchical organization. As grammar rules are also modeled as feature structures, type constraints and defeasible constraints can be imposed on them.

A grammar specifies the features to be appropriate for each type and the type of value for each feature. In addition, the feature structures and the hierarchy

of the types are organized. The features used for the basic types and the immediate supertypes (IST) are illustrated, as in (62).

(62)

(Ginzburg and Sag, 2000, p. 19, 32)

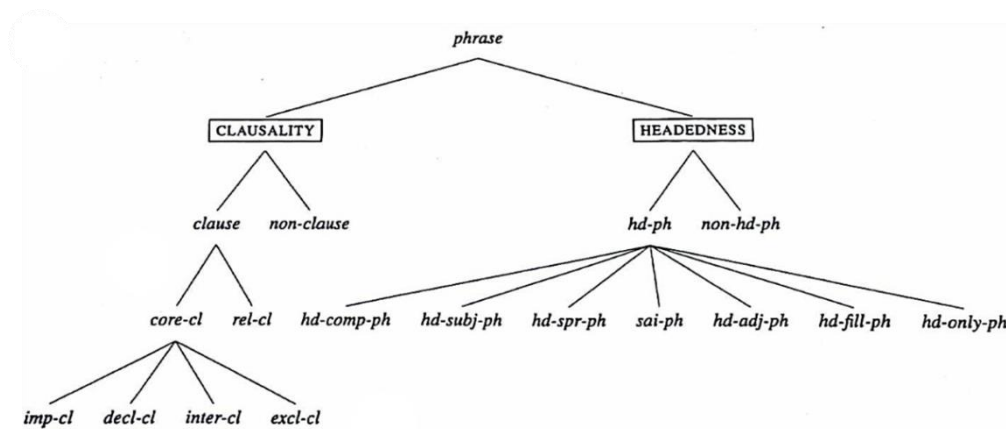
Type	Features/Type of value	IST
<i>sign</i>	$\left[ \begin{array}{ll} \text{PHONOLOGY} & \text{list}(\text{form}) \\ \text{SYNSEM} & \text{synsem} \\ \text{CONTEXT} & \text{conx} - \text{obj} \end{array} \right]$	<i>feat-struc</i>
<i>phrase</i>	$[\text{DTRS} \quad \text{nelist}(\text{sign})]$	<i>sign</i>
<i>synsem</i>	$\left[ \begin{array}{ll} \text{LOCAL} & \text{local} \\ \text{SLASH} & \text{set}(\text{local}) \\ \text{WH} & \text{set}(\text{scope} - \text{obj}) \\ \text{BCKGRND} & \text{set}(\text{fact}) \end{array} \right]$	<i>feat-struc</i>
<i>local</i>	$\left[ \begin{array}{ll} \text{CATEGORY} & \text{category} \\ \text{CONTENT} & \text{sem} - \text{object} \\ \text{STORE} & \text{set}(\text{scope} - \text{obj}) \end{array} \right]$	<i>feat-struc</i>
<i>category</i>	$\left[ \begin{array}{ll} \text{HEAD} & \text{part} - \text{of} - \text{speech} \\ \text{SUBJ} & \text{list}(\text{synsem}) \\ \text{COMPS} & \text{list}(\text{synsem}) \\ \text{SPR} & \text{list}(\text{synsem}) \end{array} \right]$	<i>feat-struc</i>

When phrases are specified by feature structures, they can be hierarchically organized. This hierarchy can capture the family resemblances of the phrase types by expressing high-level generalizations as well as idiosyncratic constructional properties. Hence, the construction-based analysis unifies the way of describing the corresponding rules across the different types of phrases.

To classify the phrases, two dimensions HEADEDNESS and CLAUSALITY are assumed. This cross-classification is called *multiple inheritance hierarchy* and it requires every phrasal type to satisfy the constraints inherited from

its two supertypes, one from a HEADEDNESS type and another from a CLAUSALITY type. The hierarchy for the basic phrase types is specified, as in (63).

(63)



(Ginzburg and Sag, 2000, p. 39)

The HEADEDNESS dimension distinguishes *headed-phrase* (*hd-ph*) from *non-headed phrase* (*non-hd-ph*). All phrases, either *hd-ph* or *non-hd-ph*, are constrained by Empty Comps Constraint (ECC).

(64) Empty Comps Constraint (ECC)

*phrase*:  
[CAT [COMPS <>]] → ...

(Ginzburg and Sag, 2000, p. 33)

The ECC guarantees that complements should be satisfied at the lexical head, before the phrase level.

The type *hd-ph* is subject to the type constraint called the Generalized Head Feature Principle (GHFP).

(65) Generalized Head Feature Principle (GHFP)

$$\begin{array}{l} \textit{hd-ph}: \\ [\text{SYNSEM} \ / \boxed{1}] \rightarrow \dots H[\text{SYNSEM} \ / \boxed{1}] \dots \end{array}$$

(Ginzburg and Sag, 2000, p. 33)

The notation of ‘/’ is used to indicate a defeasible constraint. It means that the feature value of mother and its head daughter is identical by default, except when it is contradicted by the specific constraints imposed on the subtype.

Among seven subtypes of the headed-phrases, the type *head-complement-phrase* (*hd-comp-ph*) is specified as the construction, as in (66).

(66) *hd-comp-ph*

$$[ ] \rightarrow \dots H \left[ \begin{array}{l} \textit{word} \\ \text{COMPS} \ \textit{nelist} (\boxed{A} \oplus \textit{list}) \end{array} \right], \boxed{A}$$

(Ginzburg and Sag, 2000, p. 34)

The complement daughter  $\boxed{A}$  is specified in the COMPS list of the head daughter, which is required to be nonempty. This constraint asserts that any intransitive lexicon whose COMPS list is empty is not classified as the type *hd-comp-ph*. Since *hd-comp-ph* is the subtype of *hd-ph*, it also obeys the GHFP.

The CLAUSALITY dimension, on the other hand, identifies whether the type is *clause* or *non-clause*. In Ginzburg and Sag's (2000) grammar, clauses are the constructions whose content is complete to convey the *message* such as *proposition, question, outcome, or fact*.

(67) *clause*:

$$[\text{CONT } \textit{message}] \rightarrow \dots \quad (\text{Ginzburg and Sag, 2000, p. 41})$$

Clauses can be categorized into two subtypes: *core clause (core-cl)* and *relative clause (rel-cl)*. This paper focuses on the constraints on core clauses.

(68) *core-cl*:

$$\left[ \text{HEAD} \begin{bmatrix} \textit{verbal} \\ \text{VFORM} & \textit{clausal} \\ \text{MOD} & \textit{none} \end{bmatrix} \right] \rightarrow \dots \quad (\text{Ginzburg and Sag, 2000, p. 41})$$

The constraints in (68) guarantee that core clauses including declaratives, interrogatives, exclamatives, and imperatives are not modifiers because of the value *none* for the MOD feature.

One of the subtypes of core clauses is declarative clause, illustrated in (69).

(69) *decl-cl*

$$\left[ \text{CONT} \begin{bmatrix} \textit{austinian} \\ \text{SOA} & /[\underline{1}] \end{bmatrix} \right] \rightarrow \dots \mathbf{H} \left[ \text{CONT} /[\underline{1}] \right] \dots \quad (\text{Ginzburg and Sag, 2000, p. 42})$$

The semantic type *austinian* in the type *decl-cl* has two subtypes: *proposition* and *outcome*. Indicative declarative clauses refer to the proposition, which has [SOA *r-soa*] value. In contrast, imperative or subjunctive clauses denote the outcome, which are presented as [SOA *i-soa*]. Because both the conditional conjunction construction and its head daughter are specified as [SOA *r-soa*], this construction is subsumed as the subtype of *decl-cl*.

## 4.2 The Structure of the Conditional-*and* Construction

In this thesis, I propose that the conditional-*and* construction contains the asymmetric two clauses: the first conjunct of the construction as a subordinate clause and the second conjunct as a main clause.

To argue for the discrepancy between the clauses, I present some of the syntactic phenomena. First, the sentences with right node raising and gapping are not allowed in the conditional-*and* construction. The coordinate structure, however, permits those sentences in both conjuncts.

- (70) a(=(13b)). \*Big Louie found out about \_\_\_\_, and Big Louie puts out a contract on, that guy who stole some loot from the gang. [conditional conj.]  
 b(=(13a)). Big Louie found out about \_\_\_\_, and Big Louie put out a contract on, that guy who stole some loot from the gang. [coordination]

- (71) a(=(14b)). \*Big Louie steals one more car radio and Little Louie the hubcaps. [conditional conjunction]  
b(=(14a)). Big Louie stole another car radio and Little Louie the hubcaps. [coordination]

Also, the tripartite structure is not compatible with the conditional conjunction construction, in contrast with the coordinate structure.

- (72) (=12) You drink another can of beer, Bill eats more pretzels, and I'm leaving.  
≠If you drink another can of beer, (and if) Bill eats more pretzels, I'm leaving.

Furthermore, the order of the conjuncts can be the evidence for the subordinate structure of the conditional-*and* construction. This implies that the meaning of the conditional-*and* construction changes when the order of the conjuncts is reversed. In contrast, the conjuncts of the coordinate construction are interchangeable without changes in its sentential meaning.

- (73) a. If you drink another can of beer, I'm leaving. [*if*-conditional]  
≠If I'm leaving, you drink another can of beer.  
b. You drink another can of beer and I'm leaving. [conditional conjunction]  
≠I'm leaving and you drink another can of beer.  
c. You drink another can of beer and Bill eats more pretzels. [coordination]



=Bill eats more pretzels and you drink another can of beer.

Note that the typical subordinating clause can either precede or follow the main clause. However, in the conditional conjunction construction, the order of two clauses is strict: a subordinating always comes first. I explain this by observing the similarity with *if...then* clause. Like *then*-clause cannot precede the *if*-clause, *and*-clause should follow the first clause.

So far, some syntactic phenomenon show that the structure of the conditional-*and* construction differs from that of coordinating-*and* construction. Based on this distinction, I further argue that the second clause of the construction is a main clause whereas the first one is a subordinating clause.

To support this claim, I suggest several examples with regards to main clause phenomena. The second clause can influence the environment of the entire sentence in that it function as a main clause, as noted in Culicover and Jackendoff (1999). Therefore, if these examples reveal that one of the conjuncts is a main clause, then the structure of the entire construction naturally becomes adjunct + S.

To begin with, a tag question is reflected by the second clause of the conditional-*and* construction, not by the first clause.

- (74) a. She walks into his office and John starts blabbing about his secret,  
doesn't he?
- b. \*She walks into his office and John starts blabbing about his secret,  
doesn't she?

Another evidence is subject-auxiliary inversion which is only possible in the main clause. As for the conditional-*and* construction, only the second clause can undergo the inversion.

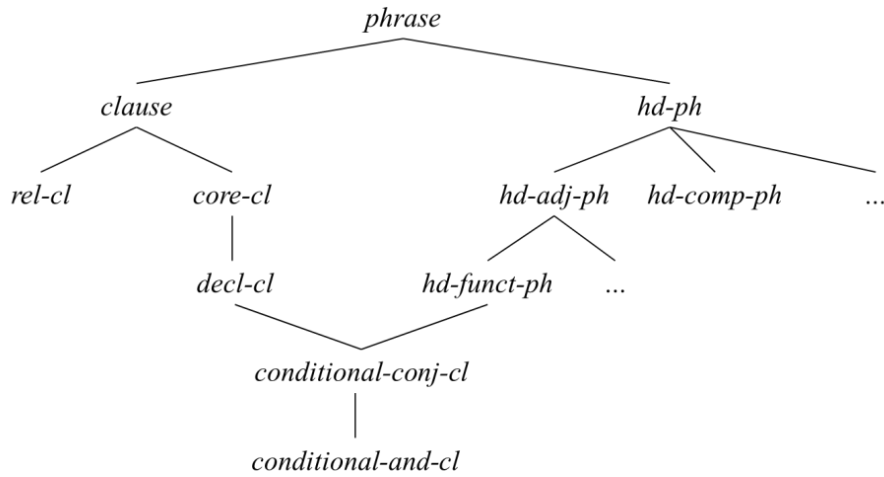
- (75) a. ?\*Who did John say Mary goes out with t and her father disinherits her?  
 b. She walks into his office and what does John starts blabbing about t?

In addition, a verb or an adjective which requires the subjunctive clause can support the main clause status of the second clause. When the conditional conjunction structure becomes the complement of this kind of verbs or adjectives, only the second clause shows the subjunctive morphology.

- (76) {It is imperative that / I demand that}  
 a. John finishes his homework, and he be allowed to go out.  
 b. \*John finish his homework, and he is allowed to go out.

Therefore, it is evident that the conditional-*and* construction contains a subordinate clause and a main clause. To handle this construction, I adopt a non-derivational approach under the framework of HPSG. I treat the conditional-*and* construction as an independent construction *conditional-and-cl*, as a subtype of *conditional-conj(unction)-cl*. I classify the newly proposed *conditional-conj-cl* and *conditional-and-cl* into the hierarchy as in (77).

(77)



Here, the type *conditional-and-cl* has the supertype *conditional-conj-cl*. It seems to be redundant to propose the *conditional-conj-cl* but I will show the other subtype, conditional conjunction *or* later in section 4.5.

The type *conditional-conj-cl* is a subtype of the *decl-cl* and *head-funct-phrase* (*hd-funct-ph*). Accordingly, the constraints of two mother types are inherited to the *conditional-conj-cl* and also to the *conditional-and-cl*. The constraints imposed on the *hd-funct-ph* and its supertype *head-adjunct-phrase* (*hd-adj-ph*) are specified in (78) and (79).

(78) *hd-funct-ph*:

HD – DTR SYNSEM	1
ADJ – DTR SYNSEM LOC CAT HEAD SELECT	1

(Van Eynde, 2007, p. 420)

(79) *hd-adj-ph*:

$$\begin{bmatrix} \text{SYNSEM|LOC|CAT|MARKING} & \boxed{1} \\ \text{ADJ} - \text{DTR|SYNSEM|LOC|CAT|MARKING} & \boxed{1} \end{bmatrix}$$

(Van Eynde, 2007, p. 421)

In the constraints for the *hd-adj-ph* and *hd-funct-ph*, two features are additionally adopted. One is the SELECT feature which is used to show what it modifies or marks. If any expression has the value for this SELECT feature, it denotes that it functions as a modifier (adjective or adverb) or a marker (determiner). The MOD, SPEC, and SPR features are replaced by a single SELECT feature.

The other feature is the MARKING (MRKG) feature<sup>19</sup>. The value of the MRKG feature can be *unmarked* (*unmk*) for the unmarked signs such as *book*. Other values for the marked signs are *than*, *as*, *of*, *det*, *a*, *def* as noted in Sag (2012). The MRKG value of an adjunct daughter percolates up to its mother. The features SELECT and MRKG are closely related, since the element which contains a MRKG value is also specified with a nonempty value for the SELECT feature.

In this section, I have discussed the reason for treating the conditional-*and* construction as a form of adjunct + S, whose second clause is a main clause. Then, I have examined the constructional hierarchy of the *conditional-and-cl*.

However, more consideration is required for the conjunction *and*: whether a subordinating marker or a main clause marker. Also, it is necessary to reveal the

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<sup>19</sup> The feature MRKG was first introduced by Pollard and Sag (1994) and refined by Van Eynde (2006; 2007). As Sag (2012) mentioned, the MRKG value contains the complex information about agreement patterns which are not related to the data focused on this paper.

specific constraints which are applied to the whole construction. In the next section, I identify the status of *and* as well as the details of the type *conditional-and-cl*.

### 4.3 Constraints on the Conditional-*and* Construction

To account for the conditional-*and* construction, I propose a new analysis of the conditional conjunction *and*. Previously, Culicover and Jackendoff (1997) assumed that the conditional-*and* might appear at the end of the first clause as schematized in (80), even though it is not accepted in the major claim of their mismatching hypothesis.

(80) [S<sub>1</sub> and] S<sub>2</sub> (not adopted) (Culicover and Jackendoff, 1997, p. 199)

They discarded the possibility of regarding the conjunction *and* as a subordinator for some reasons discussed in section 3.1. They argued that a subordinator in English should be placed in the clause-initial position. Also, the subordinate clause in general appears either in the sentence-initial or in the sentence-final position.

However, I argue that, if the conjunction *and* is considered as a main clause marker, their rebuttal can be compromised. Following this argument, the current paper adopted a new perspective toward the conditional conjunction *and* as in (81).

(81) [You drink another can of beer] [and I'm leaving].

Since the clause-initial marker is natural in English, there is no burden of accounting for the position of conditional conjunction. Also, there are some constructions that have the markers for both clauses. They are called *correlative clauses*<sup>20</sup>, types of which include the *if-then* construction, the *as-so* construction and the comparative correlative construction.

- (82) a. If I read more, then I understand more. [*if-then* clause]  
b. As I read more, so I understand more. [*as-so* clause]  
c. The more I read, the more I understand. [comparative correlative clause]
- (Borsley, 2004, p.76)
- (83) I read more, and I understand more.

Even though the conditional-*and* construction only contains the main clause marker *and*, the clause-initial main clause marker is more general than the clause-final subordinator. Thus, the conditional-*and* belongs to the category of main clause marker along with *then*.

Also, the conditional conjunction *and* is a main clause marker for a phonological reason. The conditional conjunction construction has the pause before *and*, as shown in Keshet (2013). If the conditional conjunction is a subordinator, then the pause should be come after the conjunction.

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<sup>20</sup> The analyses for correlative clauses will not be discussed in detail. The comparative correlative construction, for example, was highlighted in Borsley (2004) with other types of correlative clauses.

Moreover, there are cross-linguistic data that license the existence of the main clause marker in conditionals indirectly. In Bengali and Hindi, for instance, the marking of the main clause is obligatory whereas that of the subordinating clause is optional<sup>21</sup>.

(84) Hindi:

(agar) mehnat karoge to safal hoge.

If hard-work do-Fut.2Pl then successful be-Fut.2Pl

(If you work hard, you'll be successful.)

(Bhatt and Pancheva, 2006, p.644)

The data from Hindi suggests that the presence of a main clause marker without a subordinator is possible cross-linguistically. It supports the idea that the conditional-*and* construction allows the overt marking of the main clause.

Therefore, this paper treats the conditional conjunction *and* as a main clause marker. I newly propose the lexical specification of the conditional-*and* as in (85).

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<sup>21</sup> Comrie (1986) noted that the explicit marking of the main clause seems to be related to particles. He claims that it is often originated from pronominal elements and considered as resumptive pronouns. No further issues about Hindi origin are examined. I suggest these data only for indirect evidence of the main clause marker in English.

$$\left[ \begin{array}{c} \text{PHON} \\ \text{SYNSEM|LOC|CAT} \end{array} \left[ \begin{array}{c} \text{HEAD} \\ \text{MRKG} \end{array} \left[ \begin{array}{c} \text{conj} \\ \text{SELECT} \end{array} \left[ \begin{array}{c} < \text{ and } > \\ \text{CAT} \end{array} \left[ \begin{array}{c} \text{HEAD} \\ \text{SUBJ} \\ \text{COMPS} \\ \text{MRKG} \end{array} \left[ \begin{array}{c} \text{verb} \\ \text{VFORM} \\ < > \\ < > \\ \text{unmk} \end{array} \left[ \begin{array}{c} \text{fin} \end{array} \right] \right] \right] \right] \right] \right] \right]$$

Furthermore, the conditional conjunction takes the feature MRKG, which is adopted from Sag's (2012). As aforementioned, the MRKG value of a marker percolates up to the mother node. Not only the *conditional-and-cl* as a whole but also the integration of *conditional-and* and the following clause is subject to the constraints on the *hd-funct-ph* in (78), repeated here as (86).

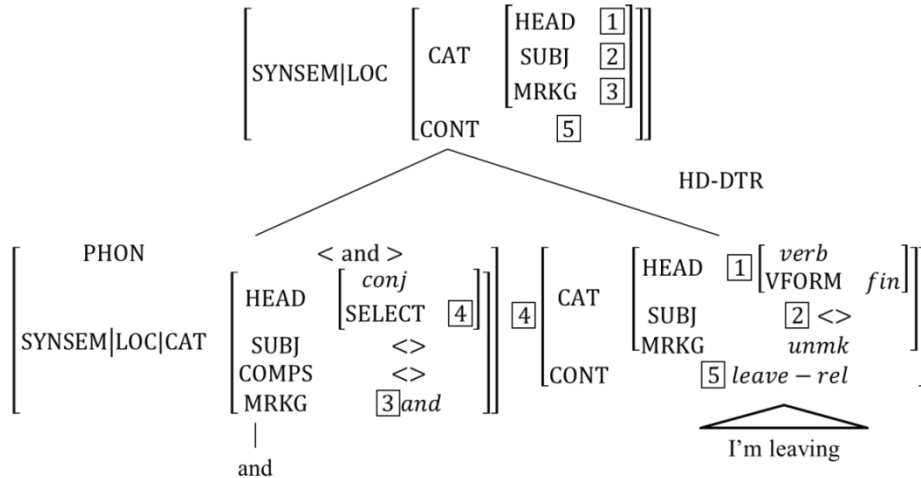
HD – DTR SYNSEM	1
ADJ – DTR SYNSEM LOC CAT HEAD SELECT	1

56



In my analysis, conditional-*and* modifies the main clause of the conditional-*and* construction. The structure for conditional-*and* + S is illustrated in (87).

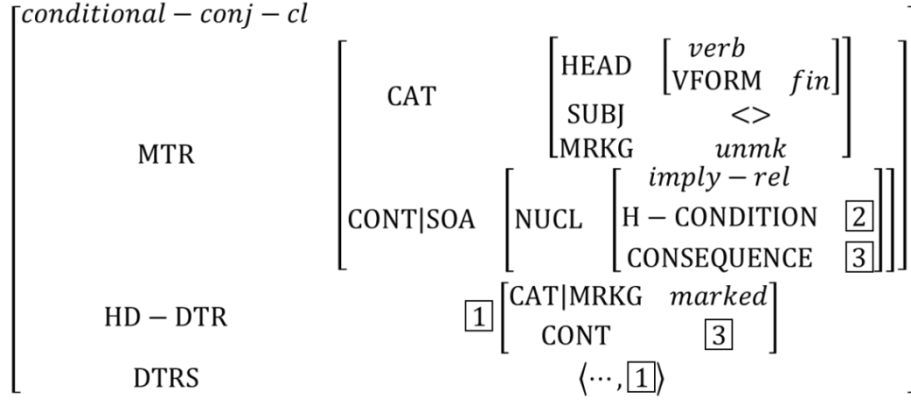
(87)



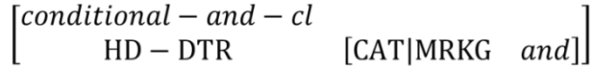
Following the constraints on the *hd-adj-ph* in (79), the [MRKG *and*] value of the conditional-*and* passes up to the mother. Other syntactic features, however, is passed up from the head daughter to its mother due to the GHFP.

The structure conditional-*and* + S should be preceded by another clause to become a complete sentence. I first propose the *conditional-conj-cl* to make the first conjunct to combine with conditional conjunction + S, and then proceed to the *conditional-and-cl*. The construction *conditional-conj-cl* and *conditional-and-cl* are licensed by the constraints in (88) and (89), respectively.

(88)



(89)



In the type *conditional-conj-cl*, the syntactic features CAT of the mother are basically passed up from its head daughter due to the constraint imposed by the Generalized Head Feature Principle. The MRKG value, however, is percolated up from the first daughter due to fact that this construction is the subtype of *hd-adj-ph*. The constraints on the *hd-funct-ph* are also applied to the construction to select the following sentence. I also illustrate the list of the daughters (DTRS) to specify the order of them. Specifically, the *conditional-conj-cl* has its head daughter [1] following the functor daughter.

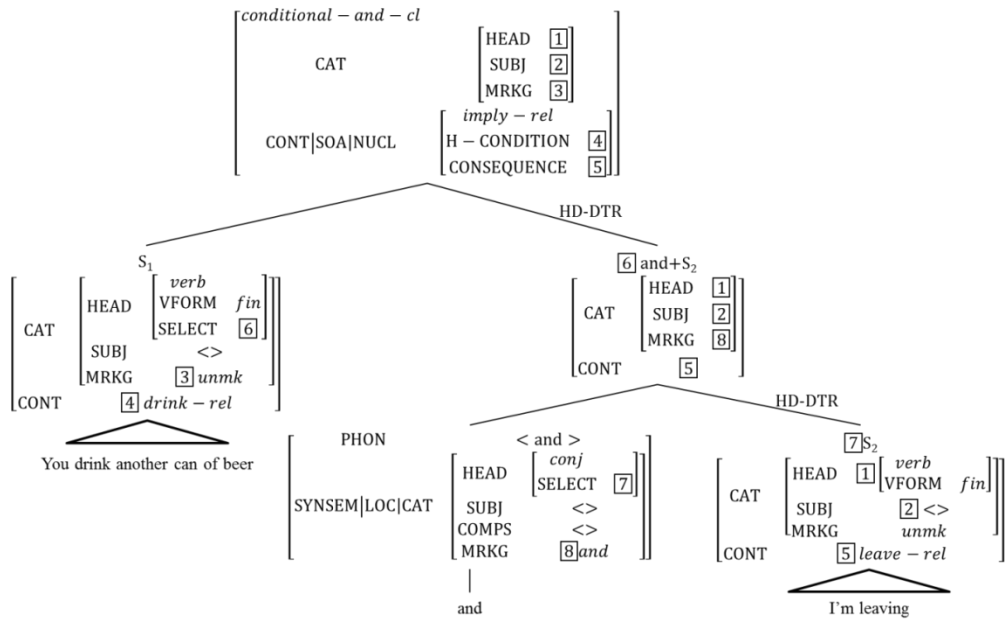
As for the semantics, the conditional conjunction is only used in the hypothetical conditional as mentioned in section 2.1.2. Thus, I propose the *imply-rel(ation)*, referring to a logical connective which is symbolized as an arrow ( $\rightarrow$ ) in

a conditional statement  $p \rightarrow q$ . Then, this relation denotes that the H(ypothetical)-CONDITION implies the CONSEQUENCE to deliver the meaning of conditionals. To be specific, the meaning of the mother node is interpreted by the combination of the CONT values of a conditional clause and a consequence clause. In the process of conjoining conditional-*and* and the following sentence, the semantic features of the conjunction are not passed up to the mother since the following sentence, not the conjunction, is a head daughter. It means that the conjunction does not affect the meaning of the conditional conjunction + S structure. Therefore, the second conjunct of the *conditional-conj-cl* can hold its sentential meaning regardless of the existence of the conditional conjunction.

The *conditional-and-cl* naturally follows all constraints imposed on its supertype, *conditional-conj-cl*. What it additionally specifies is the MRKG value of the head daughter as [MRKG *and*]. The value for the MRKG feature denotes which conditional conjunction is used for the construction, either conditional-*and* or conditional-*or*.

Here, the typical example for the *conditional-and-cl* is represented as in (90).

(90) You drink another can of beer and I'm leaving.



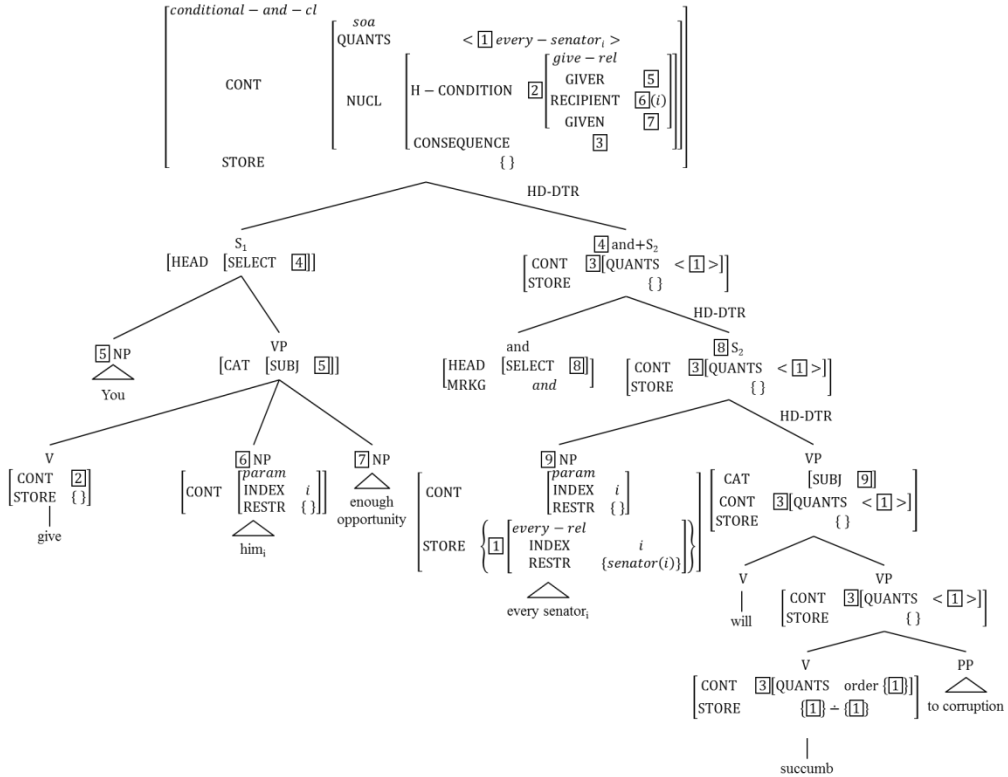
All things considered, this structure describes that the *conditional-and-cl* consists of two clauses S<sub>1</sub> and S<sub>2</sub>, in which the former selects the latter clause combining with the conditional-*and*. The relationship between the conditional-*and* and the following clause S<sub>2</sub> is also the selector-selected relation. Besides, this representation indicates that the meaning of each clause is combined by the *imply-rel* in the constructional level. Notably, the conditional interpretation is derived from the whole construction, not from each clause.

#### 4.4 Explaining Syntactic and Semantic Properties

So far, I have argued that the conditional-*and* construction is comprised of a subordinating clause and a main clause with the marker *and*. Based on the proposed type *conditional-and-cl*, I will analyze the syntactic and semantic

properties of the construction discussed in section 2.1. First, consider the following example of variable binding.

- (91) You give him<sub>i</sub> enough opportunity and every senator<sub>i</sub> will succumb to corruption.



The licensing of variable binding is realized by the feature QUANTS and STORE. The quantifier which does not bind the variable yet is located in the STORE. The stored quantifier goes up to the higher levels until it is assigned to the proper scope. If assigned, the quantifier is retrieved from the STORE and has the wide scope interpretation. The quantifier *every* in the example (91) undergoes this

process. According to the Store Amalgamation Constraint, a verb has the same STORE value with its arguments.

(92) Store Amalgamation Constraint

$$word \Rightarrow \left[ \begin{array}{l} \text{SS|LOC} \quad \left[ \begin{array}{l} \text{CONT} \quad [\text{QUANTS} \quad \text{order}(\underline{\Sigma_0})] \\ \text{STORE} \quad (\underline{\Sigma_1} \cup \dots \cup \underline{\Sigma_n}) \div \underline{\Sigma_0} \end{array} \right] \\ \text{ARG-ST} \quad \langle [\text{STORE} \quad \underline{\Sigma_1}], \dots, [\text{STORE} \quad \underline{\Sigma_n}] \rangle \end{array} \right]$$

Thus, the verb *succumb* shares the STORE feature of the NP *every senator*, but the STORE value is simultaneously retrieved to its QUANTS. As the inheritance of the feature QUANTS is subject to the GHFP, the QUANTS value is passed up to the highest level of the construction. Consequently, the quantifier *every* receives a wide scope, which allows the noun *every senator* to bind the co-indexed pronoun *him* in the preceding clause. Therefore, the variable binding of the conditional-*and* construction is adequately explained on the basis of the theory of quantifier scope.

Next, asymmetric extraction is possible for the conditional-*and* construction. Extraction out of adjunct has been treated as ungrammatical due to the Adjunct Island Constraint<sup>22</sup>. However, compared to other island constraints, the Adjunct Island Constraint was considered as weaker islands (Cinque, 1990; Truswell, 2007). Moreover, Pollard and Sag (1994) argued that some examples of adjunct extraction are acceptable.

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<sup>22</sup> Adjunct Island Constraint (Huang, 1982 among other) defines that if an XP is in an adjunct position, nothing may move out of it.

- (93) a. Those boring old reports, Kim went to lunch without reading.  
b. That's the symphony that Schubert died without finishing.

(Pollard and Sag, 1994, p. 183)

These examples violate the Adjunct Island Constraint in that the extracted element is originally from the part of adjunct. It should be ungrammatical according to the constraint, but some speakers including Pollard and Sag (1994) judged reversely. The judgment of the sentences in (93) as grammatical implies that the Adjunct Island Constraint is not an impregnable but a cancellable constraint. If the Adjunct Island Constraint is an optional depending on the cases<sup>23</sup>, asymmetric extraction of the conditional-*and* construction does not need to be circumvented.

In addition, I turn to the illegitimacy of right node raising and gapping in the conditional conjunction structures. In the literature, the way of treating them has been controversial as to whether they undergo the Across-the-Board movement (Postal, 1974; Johnson, 2009, etc.) or ellipsis (Wilder, 1999; Coppock, 2001, etc.). Nevertheless, both approaches agree that they appear in the syntactically coordinate structures. In my analysis, however, the conditional-*and* construction is treated as a subordinate structure, not a coordinate structure. Henceforth, right node raising and gapping are naturally impossible in this construction.

Next, the quantified adverb in the second clause of the conditional-*and* construction can take scope over the entire sentence, but that in the first clause

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<sup>23</sup> Some researchers, for example Truswell (2007), viewed the extraction out of adjunct island is grammatical for the semantic reason. He claimed that the adjunct which denotes the event in the matrix verb's argument structure can allow the extraction out of it. Henceforth, the adjunct island constraint would not be considered as strict in accordance with some counterexamples.

cannot. One way to explain this property is to analyze the quantificational structure of the sentence. Since the adverb of quantification such as *always* is restricted by the *if*-clause, the content of this *if*-clause is presupposed or background-entailed, while the following main clause which becomes the nuclear scope is asserted or focused (Lewis, 1975; Kratzer, 1986). According to the claim that the adverb which is adjoined to the focused phrase can outscope the whole sentence (Bende-Farkas, 2009), only the quantified adverb in the main clause can take scope over the sentence. Assuming that the conditional-*and* construction shows the same structure with the *if*-conditional, the quantified adverb raising in the conditional-*and* construction can be dealt with in a parallel way. Here, I briefly show how the adverb raising can be illustrated semantically. Since the topic of the adverbs of quantification is not only associated with the semantic issue, a further research with respect to its syntax still remains.

Lastly, the NPI appearance in the first clause of the construction can be explained in terms of nonveridicality. The concept of nonveridicality denotes that NPIs are licensed in nonveridical context (Zwarts, 1995; Giannakidou, 2002)<sup>24</sup>. According to them, the conditional clauses are one of the environments for NPIs. Similarly, NPIs can appear in the first clause of the *conditional-and-cl* without a further explanation, since I analyze it as one sort of the conditionals. Although this explanation needs a further investigation from the syntactic view, I suggest the way

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<sup>24</sup> The definition for nonveridicality is proposed by Giannakidou (2002) as follows.

- (i) (Non)veridicality for propositional operators
  - a. A propositional operator  $F$  is veridical iff  $Fp$  entails  $p$ :  $Fp \rightarrow p$ ; otherwise  $F$  is nonveridical.
  - b. A nonveridical operator  $F$  is antiveridical iff  $Fp$  entails not  $p$ :  $Fp \rightarrow \neg p$ .



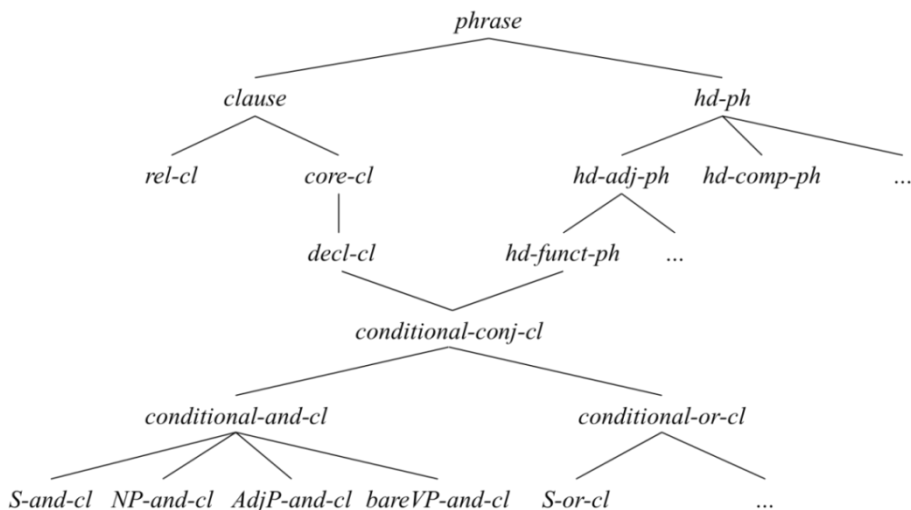
of accounting for the NPIs in the conditional-*and* construction based on the semantic analysis.

## 4.5 Application to the Related Structures

Thus far, the structure of the conditional-*and* construction is proposed and I account for the characteristics of the construction with the mechanisms of an HPSG-based grammar.

Here, I propose the related structures with the conditional-*and* construction (mentioned in section 2.2 above) under the similar syntactic analysis, while the literature has solely examined their meaning interpretation. Of course, it requires some specifications to capture the distinctiveness of each construction. Still, the basic idea of the *conditional-and-cl* can be applied to the relevant structures in the same vein. The newly proposed hierarchy, which is expanded from (77) above, is illustrated as in (94).

(94)



The first subtype of the *conditional-and-cl* is the type *S-and-cl*, which is the typical construction containing the conditional-*and*. It has two complete sentences before and after the conditional conjunction as in the sentence (95).

(95) You drink one more can of beer and I'm leaving.

This *S-and-cl* naturally inherits the constraints from the supertypes such as *conditional-conj-cl* and *conditional-and-cl*. In addition to the inherited constraints, I further specify the constraints on the type *S-and-cl*.

(96)

$$\left[ \begin{array}{l} S - and - cl \\ MTR \\ DTRS \end{array} \left[ \begin{array}{l} [CONT|SOA|NUCL \quad [H - CONDITION \quad \boxed{1}]] \\ \left\langle \left[ \begin{array}{l} CAT \\ \left[ \begin{array}{l} HEAD \\ SUBJ \end{array} \right] \left[ \begin{array}{l} verb \\ VFORM \quad fin \end{array} \right] \end{array} \right] \right\rangle, \mathbf{H} \end{array} \right. \left. \begin{array}{l} \\ [CONT \quad \boxed{1}] \end{array} \right] \right]$$

This type determines the syntactic information of the first clause as a complete sentence, which has the saturated subject and the finite verb form. To be specific in semantics, the meaning of the hypothetical conditional comes from the CONT value of the first clause.

The second structure to discuss is OM-sentences, with the NP in the first conjunct. The typical example of the OM-sentences is shown in (97).

(97) One more can of beer and I'm leaving.

In my analysis, I discard the term OM-sentences because a few of examples do not contain the phrase *one more*. Instead, I propose the *NP-and-cl* with a reference to the *conditional-and-cl* as in (98).

(98)

$$\left[ \begin{array}{l} NP - and - cl \\ MTR \quad \left[ \text{CONT|SOA|NUCL} \quad \left[ H - \text{CONDITION} \quad \left[ \begin{array}{l} v - rel \\ ARG_1 \end{array} \quad \boxed{1} \right] \right] \right] \\ DTRS \quad \left\langle \left[ \begin{array}{l} CAT \quad \left[ \begin{array}{l} noun \\ SELECT \end{array} \right] \\ CONT \quad \left[ \begin{array}{l} <> \\ INDEX \quad \boxed{1} \end{array} \right] \end{array} \right] , H \right\rangle \end{array} \right]$$

The *NP-and-cl* can also be treated as the subtype of the *conditional-and-cl*. The only difference from the *S-and-cl* is that it has the NP in its first conjunct. Even though the first conjunct has the form of NP, it conveys the propositional meaning relevant to the NP.

The interpretation of the NP is vague in the way that a variety of contexts can be involved, as noted in Culicover and Jackendoff (1997). Thus, the meaning of the example (97) can be paraphrased as typical situations where something happens connected to one more can of beer such as drinking. Since the *NP-and-cl* posits the clausal meaning, not the nominal meaning, the NP is interpreted as an argument of the adequate verb in the hypothetical conditional clause referring to

the contexts. The explicit meaning of the *v-rel* would be come from the pragmatics of the sentence<sup>25</sup>.

Next, what I newly observe is the structure of *AdjP + and + S*, represented as in (99). The proposed constraints on the *AdjP-and-cl* are illustrated in (100).

(99) Too long and you'll hit the ground behind the ball.

(100)

$$\left[ \begin{array}{l} \text{AdjP} - \text{and} - \text{cl} \\ \text{MTR} \quad \left[ \text{CONT|SOA|NUCL} \quad \left[ \text{H} - \text{CONDITION} \quad \left[ \begin{array}{l} v - \text{rel} \\ \text{ARG}_1 \end{array} \quad \boxed{1} \right] \right] \right] \\ \text{DTRS} \quad \left\langle \left[ \text{CAT} \quad \left[ \begin{array}{l} \text{adj} \\ \text{HEAD} \quad [\text{PRED} \quad +] \\ \text{SUBJ} \quad < \text{NP}_{\boxed{1}} > \end{array} \right] \right], \text{H} \right\rangle \end{array} \right]$$

The adjective in the *AdjP-and-cl* is the predicative adjective which appears after the verbs such as *be*. This information about the adjective phrase is described with the feature [PRED +]. Since the adjective phrase actually delivers the sentential meaning of H-CONDITION, it needs the adequate subject and the verb. The subject of the adjectival phrase is the noun phrase, although it is inferred within the context. Then, this subject should be an argument of the relevant verb relation in the *AdjP-and-cl*, which is presented by the shared index  $\boxed{1}$ .

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<sup>25</sup> Here I provide the basic construction model for OM-sentences. It needs further investigation on how the NP can deliver the sentential meaning regarding its discourse contexts.

As for pseudo-imperatives, I follow the Han's (2000) assumption that the first conjunct has the form of imperative but does not have the meaning of command.

(101) (=32b))Know the answer, and you'll get an A.

She treats the first clause of pseudo-imperatives as a distinct form from a true imperative. It is because of the reasons such that their first clause cannot stand alone, only pseudo-imperatives allow negative polarity items, they can be interpreted with generic meaning, and they can denote the past time event, all of which are aforementioned in section 2.2.3.

Since the first conjunct is not a directive but a conditional, I consider this pseudo-imperative construction as a similar construction with other conditional-*and* construction with respect to the conditional meaning it has. I call this *bareVP-and-cl* for the consistent terms across the related structures.

(102)

$$\left[ \begin{array}{l} \text{bareVP} - \text{and} - \text{cl} \\ \text{MTR} \\ \text{DTRS} \end{array} \left[ \begin{array}{l} [\text{CONT}|\text{SOA}|\text{NUCL} \quad [\text{H} - \text{CONDITION} \quad \boxed{1}]] \\ \left\langle \left[ \begin{array}{l} \text{CAT} \quad \left[ \begin{array}{l} \text{HEAD} \quad \left[ \begin{array}{l} \text{verb} \\ \text{VFORM} \quad \text{base} \end{array} \right] \end{array} \right] \right. \\ \left. \left[ \begin{array}{l} \text{SUBJ} \\ \text{CONT} \quad \boxed{1} \end{array} \right] \right\langle \rangle \end{array} \right], \mathbf{H} \right\rangle \end{array} \right]$$

The VFORM value for the first conjunct is the base form to show its imperative-like form. As mentioned above, the imperative form of a pseudo-

imperative holds the general interpretation. Therefore, it does not require the additional condition on the subject as opposed to a true imperative which needs the second person subject to denote the addressee.

Finally, one more related structure so-called conditional disjunction was introduced in section 2.2.4.

(103) Another beer or I'm leaving.

It seems that the conditional conjunction *and* is replaced by the conjunction *or*. In this perspective, the *conditional-or-cl* is another subtype of the *conditional-conj-cl*. I show the constraints on the *conditional-or-cl*.

(104)

$$\left[ \begin{array}{l} \text{conditional - or - cl} \\ \text{MTR} \\ \text{HD - DTR} \end{array} \left[ \begin{array}{l} \text{CONT|SOA|NUCL} \\ \text{[H - CONDITION} \end{array} \left[ \begin{array}{l} \text{not - rel} \\ \text{ARG} \end{array} \left[ \begin{array}{l} \boxed{1} \end{array} \right] \right] \right] \right]$$

Following the constraints on the *conditional-conj-cl*, the meaning of the *conditional-or-cl* consists of H-CONDITION and its implied CONSEQUENCE. The construction in (104) further posits that the conditional clause of the *conditional-or-cl* contains the *not-rel*, which makes the clause to be paraphrased with *if...not* clause.

Like the *conditional-and-cl* is classified with several subtypes such as *S-and-cl*, the *conditional-or-cl* has the specified subtypes such as *S-or-cl* depending on the form of the first clause. I do not give the specific information on the

subtypes of the *conditional-or-cl*, because what this study is mainly interested in is the conditional-*and* constructions.

Here, I suggest that the *conditional-or-cl* can be treated similarly to the *conditional-and-cl* under one supertype, *conditional-conj-cl*. Though the construction I propose can deal with its syntactic structure and the basic meaning interpretation, it does not cover the entire usage of the conditional disjunction *or*.

(105) a. Sit down or I'll call the police.

b. I order you to sit down or I'll call the police.

(Culicover and Jackendoff, 1997)

Both sentences in (105) contains the conditional disjunction *or* but they do not solely paraphrased with *if...not* clause. The example (105b) does not have the meaning of 'If I do not order you to sit down, I'll call the police,' but delivers an imperative meaning.

Moreover, the conditional disjunction should be differentiated from the conditional conjunction in that it does not permit the variable binding and NPI which is licensed in the conditional conjunction structure. Concerning these distinctive properties, the conditional disjunction should be examined more closely in consideration of its differences from the conditional conjunction.

In this section, I provide how the construction for the conditional-*and* clause can be expanded to the related structures with some modifications. Each relevant structure should be analyzed more in detail. Nevertheless, this paper suggests a unified way of accounting for the associated constructions.

## 5. Conclusion

In the present thesis, I have proposed an analysis of the conditional-*and* construction in terms of its syntax and semantics. I have argued that what has been treated as a syntactically coordinate structure is in fact a subordinate structure. Under my analysis, the fact that the conditional-*and* construction shares a number of properties with the conditional structures, disobeys the properties of the coordinate structure, and delivers the asymmetric meaning between two clauses is successfully explained.

The syntactic and brief semantic analysis of the conditional-*and* construction is formulated under construction-based Head-Driven Phrase Structure Grammar (HPSG). With regards to syntax, I have argued against the syntactic coordination account on the conditional-*and* construction and supported the subordinate structure by showing that the first clause of the construction functions as an adjunct and the second clause a main clause. This syntactically adjunction analysis is advantageous in interpreting an extensive range of syntactic phenomena within a standard syntactic mechanism. What I have proposed is a new phrasal type called *conditional-and-cl* and the constraints using the feature SELECT.

I have also proposed a new status for the conditional-*and* as a main clause marker, which has not been suggested in the previous studies. Using the feature MRKG, the existence of the conditional-*and* becomes irreplaceable and leads the main clause of the construction.

With regards to semantics, the conditional-*and* construction shows some peculiarities aside from the *if*-conditional. The conditional statement is restricted to



the hypothetical conditional and the main clause gives the consequential meaning only when it presents the generic or future meaning or contains a modal verb. This distinct semantics of the construction is accounted for by the constraints specified by the feature H-CONDITION and CONSEQUENCE.

All things considered, I can note the significances of the present study. First, I have suggested the syntactically subordinate structure of the construction as a form of a preceding subordinating clause combined with a main clause, which has not been opted for. This was achieved by examining the syntactic and semantic behaviors of the conditional-*and* construction in detail.

Second, my analysis contributes to the disambiguation of the coordinating *and* from the conditional-*and*. The status as a main clause marker shows that the conditional usages of *and* are independent not only in semantics but also in syntactic structure.

Third, I have first examined the conditional-*and* construction within the HPSG framework. The treatment under this non-elliptical, base-generated approach is beneficial in that it can fully describe the syntactic and semantic characteristics of the construction via the proposed constructional types without positing additional grammar rules.

Finally, the relevant types such as *NP-and-cl* can also be explained, by applying some specifications on the constraints of the *conditional-and-cl*. It suggests the possibility of treating several subtypes of the conditional-*and* construction in a unified type hierarchy. This hierarchical organization enables us to easily capture the related structures together and the relations between them.

Still, this study has remaining problems that require further investigations. First, the backward binding pattern of the conditional-*and* has not been completely dealt with. The syntax of anaphoric or pronominal binding is licensed with regard to the order in the argument structure. Since the conditional conjunction construction consists of two clauses each of which has its own argument structure, the backward binding over sentences cannot be accounted for under my analysis. In addition, I do not discuss some properties of the construction in detail, which seem to be dependent on the semantic explanation. The raising of the quantified adverbs from the second clause or the NPI licensing in the first clause has not been observed within the syntactic analysis. Lastly, the proposed construction for the conditional disjunction needs to be modified since what I propose in this study cannot be generalized for all usages of the conditional-*or*.

An important area for further researches would be to explore the peculiar semantics of the conditional conjunction construction in light of its syntactic structure. In order to contribute more to the investigations on the conditional conjunction, more detailed accounts on each construction under the *conditional-conj-cl* should be provided based on a wider range of data.

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## 국문초록

### 조건 접속사 and 에 대한 구문 기반 분석

본 논문은 구문 기반 핵어중심 구구조 문법이론 (Head-Driven Phrase Structure Grammar) 을 통해 조건적-and 구문의 통사·의미적 특성을 분석하고자 한다. 대부분의 기존 연구는 조건 접속사가 등위접속사와는 다른 특징들을 가진다고 언급하였지만, 등위접속사에서 완전히 벗어난 새로운 문장 구조를 주장하지 않았다. 하지만 이전 연구들과는 달리, 본 연구에서는 조건적-and 구문이 if-조건문과 통사적, 의미적 속성을 공유한다는 점에 주목하여, 이 구문에 대한 새로운 구문 구조를 제시한다.

통사적으로, 일반적인 등위접속사 구문과는 달리 조건적-and 구문의 선행절과 후행절은 그 기능이 서로 다르다. 본 저자는 주절 현상 (main clause phenomena) 이 후행절에서만 일어난다는 점을 근거로 하여, 조건 접속사 구문의 선행절은 종속절, 후행절은 주절이라고 주장한다. 이뿐만 아니라, 본 연구에서 조건 접속사에 주절 표지어 (main clause marker) 라는 새로운 통사적 지위를 부여하여, 조건 접속사가 주절을 이끈다고 분석한다.

의미적으로, 조건적-and 구문은 if-조건문의 쓰임 중 가정 조건문 (hypothetical conditional)의 의미만 나타낼 수 있다. 또한 후행절에는 일반적이거나 미래의 의미를 나타내는 문장만 가능하다는 의미적인 제약도 있다.

학자들은 조건적-and 구문의 특성들을 설명하기 위하여 다양한 분석을 제시한다. Culicover and Jackendoff (1997) 은 통사-의미의 불일치 (syntax-semantic mismatch) 를 가정하여, 조건적-and 구문이 통사적으로는 등위접속사 구문과 동일하다고 설명한다. Keshet (2013) 등의 학자들은 조건 접속사 구문이 의미적으로 특수한 초점 구조 (focus structure)를 가진다고 주장한다. 또한 Weisser (2015) 는 파생접근법 (derivational approach)을 기반으로 하여, 종속절이 등위절의 위치로 이동한다고 분석한다. 이러한 분석들은 등위접속사 구문과 상이한 조건적-and 구문의 특성들을 포착하지 못하거나, 조건 접속사를 포함한 관련 구문들을 제대로 설명하지 못한다.

따라서, 본 저자는 조건적-and 구문의 통사·의미적 특성들을 설명하기 위해, 해당 구문을 종속절과 주절의 결합 구문으로 보는 구문 기반적 분석을 제안한다. 구체적으로, head-functor-phrase 의 새로운 하위 유형 (type) 으로 conditional-conjunction-clause 와 conditional-and-clause 를 제안한다. 이들은 상위 유형의 제약에 따라, 통사적인 정보는 핵 딸어 (head daughter) 에서, 표지 (marking) 에 대한 정보는 기능어 딸어 (functor daughter) 에서 전달한다.

결과적으로, 새롭게 제시된 구문 유형 제약 (type constraints)은 조건적-and 구문의 구조와 의미, 구문을 이루는 절 (clause) 들간의 관계를 표현할 수 있을 뿐 아니라, 구문의 특수성을 반영하여 여러 현상들을 설명할 수 있다.

종합적으로, 본 연구는 다음과 같은 의의를 가진다. 우선, 조건적-and 구문의 통사적, 의미적 특성을 고려하여, 이전 연구와는 달리 종속절과 주절의 결합이라는 새로운 통사 구조를 제시하였다. 둘째로, 조건 접속사 and 를 등위접속사가 아닌 주절을 이끄는 접속사로 분석하여, 해당 구문이 완전히 독립된 별개의 구문임을 밝혔다. 셋째, 핵어중심 구구조 문법이론 내에서 처음으로 조건적-and 구문에 대한 분석을 제시하였으며, 비표준적인 통사 기제를 가정하지 않고 구문의 특성을 설명하였다. 마지막으로, 본 연구에서 제시한 유형 계층 (type hierarchy) 에 따라, 조건 접속사가 쓰이는 다양한 관련 구문들도 같은 구조 하에서 분석될 수 있음을 보여주었다.

**주요어:** 조건 접속사, 조건적-and 구문, 종속 구조, 주절 표지어, 핵어중심 구구조 문법이론, 구문 기반 접근법

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